

## CV for SIGURD SKOGESTAD

Norwegian citizen. Born: 14 Aug. 1955 in Flekkefjord, Norway.

### Education

- 1978: M.S. (*Siv.ing.*) in Chemical Engineering at University of Trondheim, Norwegian University of Science and Technology (NTNU). Thesis: “Characterization of reaction conditions for cracking of heavy oil fractions” (Thesis advisor: Terje Hertzberg).
- 1987: Ph.D. in Chemical Engineering at California Institute of Technology (Caltech). Thesis: “Studies on Robust Control of Distillation Columns” (Thesis advisor: Manfred Morari).

### Awards and Honors

- *Innstilling* awarded for the *Siv.ing.* degree (that is, the result was communicated to the Norwegian King), 1979.
- *Fullbright Fellowship* (travel grant) awarded for graduate studies at Caltech, 1983.
- *Utdanningsstipend* awarded from Univ. of Trondheim for graduate studies at Caltech, Sept. 1983 – Feb. 1987.
- Elected member to *The Norwegian Academy of Technical Sciences* (NTVA), 1988.
- *Ted Peterson Best Paper Award* by the CAST division of AIChE (The American Institute of Chemical Engineers), 1989.
- *George S. Axelby Outstanding Paper Award* by the Control System Society of IEEE (The Institute of Electrical and Electronic Engineers), 1990 (for journal paper no. 14).
- Elected member to *Det Kongelige Norske Vitenskapers Selskab*, 1991.
- *O. Hugo Schuck Best Paper Award* by the American Automatic Control Council, 1992 (for conference paper no. 28).
- Honorary knight of the Golden Feedback Loop, NTNU, Trondheim (1994).
- Book “Multivariable Feedback Control” (Wiley, 1996) selected first runner-up for International Federation of Automatic Control award for best textbook of the last 3 years (IFAC World Congress, Beijing, 1999).

- Outstanding Service Award of the International Federation of Automatic Control (IFAC World Congress, Prague, 2005).
- *Best paper award* for paper published in 2004 in *Computers and chemical engineering* (2006). (For paper: S. Skogestad, “Control structure design for complete chemical plants”, *Computers and Chemical Engineering*, **28** (1-2), 219-234 (2004).)
- Member of IFAC Technical Board, 2008-2014.
- Elected member of Process Automation Hall of Fame, , Delaware, USA, 23 May 2011
- Elected Fellow of American Institute of Chemical Engineers (AIChE), 2012.
- Elected Fellow of International Federation of Automatic Control (IFAC), 2014.
- Elected member to *The Norwegian Academy of Science and Letters*, Oslo, 2015.
- Honorary member of *Norwegian Society of Automatic Control* (Norsk Forening for Automatisering), 2015.
- Best paper award at the ESCAPE 2019 Symposium (Eindhoven, June 2019)
- *Computing in chemical engineering award* from the American Institute of Chemical Engineers (Orlando, 12 Nov. 2019)

## Editor and Editorial Boards

- *Editor* of *Automatica* (1996-2002).
- Member Advisory Panel: *Chem. Eng. Sci.* (from 2002).
- Member Editorial Board: *Comput. Chem. Engng.* (from 2002).
- Member Editorial Advisory Board: *Ind. Eng. Chem. Res.* (2005-2009).
- Associate Editor: *Journal of Control Science and Engineering* (new web journal; from 2006)
- Designated editor: *Control Engineering Practice* (from 2006),
- Member Editorial Board: *Chem. Eng. and Processing* (2001-2007).
- Associate Editor: *European Journal of Control* (from 2009)
- Editor (reviews): *Journal of Process Control* (from 2010)

## Work experience

- 1979: Military Service at Norwegian Defence Research Center (FFI). Projects involved batteries and fuel cells.
- 1980–83: Research engineer at Norsk Hydro’s Research Center in Porsgrunn, Department of Chemical Engineering. Projects involved process modelling, simulations and thermodynamics. Appointed Group leader of the Process Modelling and Simulation Group in 1983.
- 1983–87: Ph. D. student and Research Assistant at California Institute of Technology
- 1987– present : Professor in Chemical Engineering at NTH (after 1997: name changed to NTNU).
- 1994–95: Visiting Professor at University of California, Berkeley (Departments of Chemical Engineering and Mechanical Engineering).
- 2001–02: Visiting Professor at University of California, Santa Barbara (5 months).
- Jan. 1999 – July 2009: Head of Department of Chemical Engineering, NTNU.

## Publications

- Author of 3 books. (1) S. Skogestad and I. Postlethwaite, “Multivariable feedback control - analysis and design,” Wiley (1996); *2nd Edition* (2005). (2) S. Skogestad, “Prosessteknikk” (In Norwegian), Tapir Publishers (2000). Second edition (2003). Third Edition (2009) (3) S. Skogestad, “Chemical end energy process engineering”, CRC Press (2009).
- About 200 international journal publications.
- About 300 publications at international conferences
- H-index (ISI): 46 (2019)
- Citations (ISI): 8053 (2019)
- Publications (ISI): 335 (2019)
- H-index (Google scholar): 67 (2019)
- Total no. of citations (Google scholar): 27405 (2019)
- No. of citations to book by Skogestad and Postlethwaite, *Multivariable Feedback control*, Wiley (1996, 2005) (Google scholar): 8538 (2019)

See separate publication list for details.

## Invited plenary/keynote lectures

- “Analysis and Control of Distillation Columns”, CHISA '87, Praha, Sept 1987.
- “Towards integrating design and control: Use of frequency-dependent tools for controllability analysis”, Process Systems Engineering (PSE) '91 Canada, Aug. 1991.
- “Controllability assessment as a tool for control structure selection”, *Invited lecture at IMA Workshop on Control system design for advanced engineering systems: Complexity, uncertainty, information and organization*, Institute for Mathematics and Its Applications, Minneapolis, 13 Oct. 1992
- “Dynamics and Control of Distillation Columns - A Critical Survey”, *IFAC-symposium DYC'D+ '92*, Maryland, Apr. 1992
- “Robust multivariable control using  $H_\infty$  methods – Analysis, design and Industrial Applications”, Invited short course at 1993 European Control Conference (with I. Postlethwaite), July 1993.
- “Interactions between process design and control”, CHISA'93, Praha, Aug.-Sept., 1993.
- “Input-Output Controllability Analysis”, Reglermöte, Västerås, Sweden, Oct. 1994.
- “Dynamics and control of distillation columns - A tutorial introduction”, *Symposium Distillation and Absorption 97*, Maastricht, Netherlands, Sept. 1997.
- S. Skogestad, “Plantwide control” Invited talk at Tutzing Symposium, Germany, 11 March 1998
- S. Skogestad, “Control structure design and plantwide control - The search for the self-optimizing control structure” , Invited talk at 1998 Process Systems Engineering Seminar Series, Imperial College, London, 22 May 1998
- “Self-optimizing control: the missing link between steady-state optimization and control”, Process Systems Engineering (PSE) 2000, Keystone, Colorado, July 2000.
- “Plantwide control - towards a systematic procedure”, European Symposium on computer-aided process engineering (ESCAPE'12), The Hague, Netherlands, May 2002.
- “Feedback control theory: An overview and connections to biochemical systems theory”, 7th Intl. Symp. on Biochemical systems theory. Averoy, Norway, 17-20 June 2002

- “Control structure design: What should we control, measure and manipulate?”, First African Control Conference, Cape Town, South Africa, 03-05 December 2003.
- ”Feedback: the simple and best solution”, , Invited interactive Web-CAST lecture (American Institute of Chemical Engineers’ Division for Computing and Systems Technology), 09 February 2006.
- “The dos and don’ts of distillation column control”, *Symposium Distillation and Absorption 2006*, London, UK, Sept. 2006.
- “Self-optimizing Control: Simple Implementation of Optimal Operation”, *27th Benelux Meeting on Systems and Control*, 18-20 March 2008, Heeze, Netherlands.
- “Feedback: Still the best and simplest solution”, *4th IEEE conference of industrial electronics and applications (ICIEA)*, 25-27 May 2009, Xi’an, China.
- ”A systematic approach to plantwide control”. Invited plenary talk at ICCAS, Seoul, 28 Oct 2011.
- ”Optimal PI-Control and Verification of the SIMC Tuning Rule”, Invited plenary talk at IFAC Conference PID’12, Brescia, Italy, March 2012.
- ”Economic plantwide control”. Invited plenary talk at AMIDIQ, San Jose del Cabo, Mexico, 01 May 2013
- ”Optimality of PID control for process control applications”, Invited plenary lecture at the 5th International Symposium on Advanced Control of Industrial Processes (ADCONIP 2014), Hiroshima, Japan, May 2014.
- 03 June 2015. Invited keynote semiplenary at PSE-ESCAPE in Copenhagen.
- ”Economic plantwide control”, Invited plenary lecture at Chinese Process Control Conference, Nanchang, China, 01 Aug. 2015
- 02 Dec. 2015, Invited lecture at ETH, Zurich (ICB series): ”Devising control structures for complete chemical plants - From art to science”
- 20 June 2016. Invited talk on plantwide control at FIPSE-3 (Georgakis) Rhodos, Greece.
- 19 Jan. 2017. Invited talk at DNVA, Oslo (The Norwegian Academy of Science and Letters) on ”self-optimizing control”.
- 09-10 February 2017. Invited talks (PID and plantwide) at ”XV Simposio CEA de Ingeniera de Control: Control Total de Planta”, University of Salamanca, Spain.

- 29 May 2017. Invited plenary on plantwide control at AdCONIP 2017 (6th International Symposium on Advanced Control of Industrial Processes), Tapei, Taiwan.
- 07 June 2017. Invited plenary on plantwide control at the 21st International Conference on Process Control, Strbsk Pleso, High Tatras, Slovak Republic.
- June 2018. Paper selected for keynote presentation. 28th European Symposium on Computer Aided Process Engineering, Graz
- July 2018 Keynote speaker, 1st International workshop on Advanced Methods for Control and Estimation of Dynamic systems, Shanghai, China
- July 2018 Keynote speaker, CUHK Shenzhen-TBSI International Workshop on Machine-learning for Industrial Intelligence, Shenzhen, China.
- Oct. 2018 Plenary speaker, IEEE 22nd International Conference on System Theory, Control and Computing, Sinaia, Romania.
- Jan. 2019 Plenary speaker, Process Systems Engineering (PSE) Asia, Bangkok
- Seo. 2019 Plenary speaker, RICCCE 21 (21st Romanian International Conference on Chemistry and Chemical Engineering), Constanta, Romania
- 13 Oct. 2021. Plenary speaker at the Mexican Control Conference, CNCA 2021 (virtual)
- 27 Oct. 2021. Plenary speaker at the Brazilian Chemical Engineering Conference, COBEQ 2021 (virtual)
- 08 Dec. 2021. Plenary speaker at the Control Conference of Africa (CCA), Magaliesburg, South Africa (virtual)
- 13 June 2022: Plenary talk on "Putting optimization into the control layer using the magic of feedback control", at ESCAPE-32 conference, Toulouse, France [slides]
- 17 Aug. 2022: Plenary talk on "Advanced regulatory control - a new beginning" at IFAC Symposium on Control, Optimization and Automation in Mining, Mineral and Metal Processing (MMM 2022), Montreal. Canada

### **Some other activities**

- Chair of the PhD (d1r.ing.) committee for the Faculty of Chemistry and Chemical Technology NTH (1989-1993)

- Chair of the University committee for engineering PhD (dr.ing.) (1995 - 1999)
- Founding chair of the Nordic Process Control Working group (1994-1998)
- Board member of Norwegian Academy of Technical Sciences (NTVA) (1992- 1999)
- Head of NTNU/SINTEF's strong point center in process systems engineering (PROST) (1994 - ),
- Chair of NTHs fund (1996 - 2002)
- Board member of Professorforum NTH (1991-1993), Chair of Professorforum NTNU (1997-2001),
- Board member at the Faculty of chemistry and biology NTNU (1996-1999),
- Member of the Norwegian research council expert network (1998-2002)
- Member of the Jury for Norsk Hydro's Birkeland Award, 1999-2002
- Chair of the International Federation of Automatic Control (IFAC) coordinating committee on *Process and Power Systems (CC6)* and member of the IFAC Technical Board, 2008-2014
- Member European Union control council (EUCA) (2007-2013)
- Chair of National Committee for following up International Evaluation of Chemistry Research in Norway (2009-2010)
- Chair of Nordic Process Control Workshop, Trondheim-Bodo, January 2015 (about 70 participants)
- Chair of National Organizing Committee, *11th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems (DYCOPS-CAB 2016)*, Trondheim, Norway, 06-08 June 2016 (about 300 participants).
- Director of SUBPRO from 2015 and onwards. This is a center for research-based innovation subsea production and processing at NTNU funded by the Research Council and Industry. Budget is about 35 million NOK per year (2015-2023).
- International Program Committee (IPC) Chair for 3rd IFAC Conference of Automatic control in offshore oil and gas production, May/June 2018, esbjerg, Denmark.

## Additional Professional Activities

- Member/Fellow (2012) of American Institute of Chemical Engineers (AIChE), The Institute of Electrical and Electronic Engineers (IEEE), Norwegian Chemical Society (NKS), Norwegian Society of Professional Engineers (Tekna), Norwegian Petroleum Society (NPF).
- Chairman of Organizing Committee for NTVA Seminar on Chemical Engineering 40 years in Norway, Trondheim, Aug. 1989.
- Chairman of international program committee for symposium PSE-ESCAPE'97, Trondheim, Norway, May 1997.
- Member of international program committee and/or session chairman for a large number of international conferences.
- Member of European Federation of Chemical Engineers working group on Computer-Aided Chemical Engineering (1990 - )
- Member of European Federation of Chemical Engineers working group on Distillation and Absorbtion (1998 - )
- *Member of evaluation committees professorship:* Telemark College (1990), Luleå Technical University, Automatic control (1997), Lund University, Automatic control (1999).
- External Examiner at the University of Dar es Salaam, Tanzania, on three occasions: March 1988, April 1989 and March 1991.
- *Reviewer for:* AIChE J., Automatica, Canadian J. of Chem. Eng., Chem. Eng. Res. Des. (UK), Chem. Eng. Sci., , Comp. and Chem. Engng., Ind. Eng. Chem. Res., Int. J. of Control, Int. J. of Adaptive Control and Signal Processing, Int. J. of Robust and Nonlinear Control, IEEE Trans. of Autom. Control, National Science Foundation (US), J. of Process Control, Systems and Control Letters.

## Teaching, Master students, Doctoral students, Doctoral examiner

- Teaching: See separate
- Advisor for about 110 Diploma (Master) students
- Advisor for about 30 graduated Ph.D. students
- *External examiner at PhD defences (until 2008)*
  - Kurt Erik Häggblom, "Consistent control structure modeling with application to distillation control", Åbo Akademi, Finland, Dec. 1988.



- Charlotte Stub Nielsen, "Multivariable identification and control of an experimental distillation column with heat pump", DTH, Denmark, May 1990.
- Anders Karlström, "Modelling of packed bed distillation columns", CTH, Sweden, April 1991.
- John Delich, "The role of excess manipulated variables within control system development", Univ. of Sydney, Australia, Sept. 1992 (written statement only).
- Ronaldo G. Correa, "Control design of heterogeneous azeotropic distillation plants", DTH, Denmark, Oct. 1992.
- Stephen Walsh, "Integrated design of chemical waste water treatment systems", Imperial College, UK, July 1993.
- Ghassan A. Murad, "Robust multivariable control of industrial processes: A discrete-time multi-objective approach", University of Leicester, UK, Oct. 1995.
- Johan Pensar, "Parametric methods for optimal and robust control", Åbo Akademi University, Finland, Feb. 1996.
- Yi Cao, "Control structure selection for chemical processes using input-output controllability analysis", University of Exeter, UK, March 1996.
- Jobert Ludlage, "Controllability analysis of industrial processes", Eindhoven University of Technology, Netherlands, November 1997.
- Samara D. Chenery, "Process controllability analysis using linear and nonlinear optimisation", Imperial College, London, Jan. 1998
- Thomas E. Guttinger, "Multiple steady states in azeotropic and reactive distillation", ETH, Zurich, June 1998.
- Jens Erik Hansen, "Plant wide dynamic simulation and control of chemical processes", Technical University of Denmark, Lyngby, June 1998.
- Mads E. Hangstrup, "Strategies for industrial multivariable control - with application to power plant control", Aalborg University, Denmark, Feb 1999.
- Thomas S. Brinsmead, "Limits of controlled performance: Closing the gap via optimisation", Univ. of Newcastle, Australia, Dec. 1999 (written statement only).
- Sander Groenendijk, "Plantwide controllability and structural optimization of plants with recycle", University of Amsterdam, March 2000.
- Torben Ravn Andersen, "Operating design and operation of process integrated distillation", Technical University of Denmark, Lyngby, November 2002.

- Shehzaad Koachali, “Development of process synthesis tools for reaction and separation networks”, University of Witswatersrand, South Africa, June 2003 (written statement only).
  - Birgitta Kristiansson, “PID controllers design and evaluation”, Chalmers University of Technology, Sweden, August 2003.
  - Simon T. Holland, “Column profile maps: A tool for the design and analysis of complex distillation systems”, University of Witswatersrand, South Africa, November 2005 (written statement only).
  - Ola Sltteke, “Modeling and Control of the Paper Machine Drying Section”, Lund University of Technology, Sweden, January 2006.
  - N.V.S.N. Murthy Konda, “Plant-wide control of industrial processes using rigorous simulation and heuristics”, National University of Singapore, 2006 (written statement only).
  - Nipen M. Shah, “Targeting and multi-objective optimisation of gas-phase refrigeration processes for LNG”, Monash University, Australia, 2008 (written statement only)
  - Karin Eriksson, “Towards improved control of TMP refining processes”, Chalmers University of Technology, Sweden, June 2009.
  - Satyajit K. Wattamwar, “Identification of low order models for large scale processes,”, TU Eindhoven, Netherlands, 08 February 2010.
  - Martin Kragelund, “Optimal fuel strategy for portfolio profit maximization”, Aalborg University, Denmark, 17 February 2010.
  - Jin Guang Yu, “Modelling and optimization of building HVAC systems”, Nanyang Technological University (NTU), Singapore. Nov. 2011 (written statement only)
  - Per-Ola Larsson, “Optimization of Lower-Level Controllers and High-Level Polymer Grade Changes”, Lund University, Sweden, 11 November 2011
- *Examiner at PhD defences at NTNU:* 1) Dag Ljungquist, “Online estimation in nonlinear state-space models with application to catalytic cracking”, Div. of Eng. Cybernetics, 1990. 2) Peter Singstad, “Modeling and multivariable control of high pressure autoclave reactors for polymerization of ethene”, Div. of Eng. Cybernetics, 1992. 3) Erling Aa. Johannessen, “Synthesis of dissipative output feedback controllers: Application to mechanical systems”, Div. of Eng. Cybernetics, April 1997. 4) Bente H. Sannæs, “Solids movement and concentration profiles in column slurry reactors”, Dept. of Chemical Engineering, May 1997. 5) Knut Bakke, “Experimental and theoretical study of reflux condensation”, Dept. of Refrigeration and Air Conditioning, Dec. 1997. 6) Olav Slupphaug, “On robust constrained nonlinear control and hybrid control: BMI- and MPC-based state-feedback schemes”, Dept. of Eng. Cybernetics, Dec. 1998. 7) Gelein

M. de Koeijer, “Energy efficient operation of distillation columns and a reactor applying irreversible thermodynamics”, May 2002. 8) Steinar Kols, “Estimation in nonlinear constrained systems with severe disturbances”, Oct. 2008. + more missing ...

## Teaching Responsibilities

I am responsible for the course Process Control (approx. 60 students each year).

In addition, I teach a “crash course” in process control (about 6 lectures) as part of the course Separasjonsteknikk.

I also coteach two modules for the 5th year specialization: Advanced process control and sometimes Special topics (distillation) .

In the years 2009-2017 I taught the distillation, absorption and extraction part (50%) of the course TKP4105 Separation Technology for the 3rd year Chemical Engineering students.

In the years 1998-2003 and also in 2018, I taught the course TKP4120 Prossteknikk (Material and energy balances) for students in the 2nd (or 1st) year of Chemical Engineering and 3rd year of petroleum engineering. The course is based on my text book.

Every year I offer a PhD course based on my book on Multivariable feedback control: KP8115. Advanced process control

In the years 1989-1999: PhD course (at Division of Electrical Engineering): 43917 Multivariable Frequency Analysis (approx. 10 students each year). The course is now replaced by a 4th year course on ”Advanced Control of Industrial Processes” by Professor Morten Hovd.

## Graduated PhD students (with present affiliation)

1. Thor Mejdell, *Estimators for product composition in distillation columns*, Nov. 1990. (SINTEF, Trondheim)
2. Elling W. Jacobsen, *Studies on dynamics and control of distillation columns*, Dec. 1991. (Professor at KTH, Stockholm)
3. Morten Hovd, *Studies on control structure selection and design of robust decentralized and SVD controllers*, Oct. 1992. (Professor at Engineering Cybernetics, NTNU, Trondheim)
4. Knut W. Mathisen, *Integrated design and control of heat exchanger networks*, April 1994. (Yara, Porsgrunn)
5. Erik A. Wolff, *Studies on control of integrated plants*, July 1994. (Worked with ABB in Olso; deceased 2004)
6. Eva Sørensen, *Studies on optimal operation and control of batch distillation columns*, Aug. 1994 (Professor at University College, London)

7. H. Petter Lundström, *Studies on robust multivariable control of distillation columns*, Aug. 1994. (Energos, Trondheim)
8. John C. Morud, *Dynamics and control of integrated plants with reactors* , Apr. 1996. (SINTEF, Trondheim)
9. Ying Zhao, *Studies on modeling and control of continuous biotechnical processes*, Aug. 1996. (Cominco, Canada)
10. Atle C. Christiansen, *Studies on optimal design and operation of integrated distillation arrangements*, Jan. 1998. (Point Carbon, Oslo)
11. Kjetil Havre, *Studies on controllability analysis and control structure design*, Feb. 1998. (SPT Group, Oslo)
12. Bernd Wittgens, *Experimental verification of dynamic operation of continuous and multivessel batch distillation*, Dec. 1999. (SINTEF, Trondheim)
13. Truls Larsson, *Studies on plantwide control*, Aug. 2000. (Aker Kver, Stavanger)
14. Eva-Katrine Hilmen, *Separation of azeotropic mixtures: Tools for analysis and studies on batch distillation operation*, Des. 2000. (ABB, Oslo)
15. Ivar J. Halvorsen *Minimum energy requirements in complex distillation arrangements*, May 2001. (SINTEF, Trondheim)
16. Marius S. Govatsmark, *Integrated optimization and control*, Sept. 2003. (Equinor/Statoil, Haugesund, now Trondheim)
17. Audun Faanes, *Controllability analysis and control structures*, Sept. 2003. (Equinor/Statoil, Trondheim)
18. Hilde K. Engelen, *Process integration applied to the design and operation of distillation columns*, March 2004. (Aker Kver, Trondheim)
19. Stathis Skouras, *Heteroazeotropic batch distillation: Feasibility and operation*, May 2004. (Equinor/Statoil, Haugesund/Trondheim)
20. Vidar Alstad, *Studies on selection of controlled variables*, June 2005. (Yara, Porsgrunn)
21. Espen Storakaas, *Stabilizing control and controllability: Control solutions to avoid slug flow in pipeline-riser systems*, June 2005. (ABB, Oslo)
22. Antonio C.B. Araujo, *Studies on plantwide control*, Jan. 2007. (Ass. Prof., Federal University of Campina Grande, Brazil)
23. Tore Lid, *Data reconciliation and optimal operation - With applications to refinery processes* , June 2007 (Equinor/Statoil, Bergen)

24. Federico Zenith, Control of fuel cells, June 2007 (SINTEF Cybernetics, Trondheim)
25. Jrgen B. Jensen, Optimal operation of refrigeration cycles, May 2008 (ABB, Oslo)
26. Heidi Sivertsen, Stabilization of desired flow regimes using active control, December 2008 (Equinor/Statoil, Stjrdal)
27. Elvira M. Bergheim (Aske), Design of plantwide control systems with focus on maximizing throughput, March 2009 (Equinor/Statoil, Trondheim)
28. Andreas Linhart, An aggregation model reduction method for one-dimensional distributed systems, Oct. 2009 (Conergy AG, Hamburg).
29. Henrik Manum, Simple implementation of optimal control for process systems, Nov. 2010 (Cybernetica, Trondheim; from 2012: Equinor/Statoil, Trondheim).
30. Jens P. Strandberg, Optimal operation of dividing wall columns, June 2011 (Aker Solutions, Oslo).
31. Johannes Jhke, Invariants for optimal operation of process systems, June 2011 (Professor NTNU, Trondheim).
32. Magnus Glosli Jacobsen, Identifying active constrain regions for optimal operation of process plants, Nov. 2011 (ABB, Oslo).
33. Mehdi Panahi, Plantwide control for economically optimal operation of chemical plants - Application to GTL plants and CO<sub>2</sub> capturing processes, Dec. 2011 (Aker Solutions, Oslo; From 2014: Faculty at Ferdowsi University of Mashad).
34. Ramprasad Yelchuru, Quantitative methods for controlled variable selection, June 2012 (SINTEF, Trondheim; 2013: ABB, Oslo; 2017: Honeywell, Bangalore, India).
35. Deeptanshu Dwivedi, Control and operation of dividing-wall columns with vapor split manipulation, Jan. 2013 (ABB, Oslo).
36. Esmail Jahanshahi Control solutions for multiphase flow: Linear and nonlinear approaches to anti-slug control, Oct. 2013 (Siemens, Trondheim/Oslo).
37. Maryam Ghadrhan Optimal operation of Kaibel columns, Oct. 2014 (Equinor/Statoil, Stavanger).
38. Vinicius de Oliveira Optimal operation strategies for dynamic processes under uncertainty, Apr. 2016 (Kjelda, Trondheim).

39. Julian Straus Optimal Operation of Integrated Chemical Processes – With Application to the Ammonia Synthesis, Aug. 2018 (SINTEF Energy, Trondheim).
40. Chriss Grimholt Optimal tuning of PID controllers – And the verification of the SIMC rules, Dec. 2018 (ABB Industri, Oslo).
41. Dinesh Krishnamoorthy Novel approaches to online process optimization, Nov. 2019 (postdoc NTNU; 2022: Assistant Professor Eindhoven).
42. Adriana Reyes Lua Systematic design of advanced control structures, Feb. 2020 (SINTEF Energi, Trondheim; 2024: Equinor).
43. Cristina Zotica Optimal operation and control of Thermal Energy Systems, Feb. 2023 (SINTEF Energi, Trondheim; 2023: Equinor).
44. Allyne Machado dos Santos Modelling, Control, and Optimization of a Recirculating Aquaculture System, Oct. 2023 (Deep Seed Solutions, Rio de Janeiro).
45. Saket Adhau Data-Driven Control Strategies: From MPC to Reinforcement Learning, Jan. 2024 (ABB Oslo; Fom April 2024: SINTEF Industri Trondheim).
46. Lucas Ferreira Bernardino Optimal operation with changing control objectives, May 2024 (SINTEF Energy).
47. Risvan Dirza Coordinated Feedback-optimizing Control for Large Scale Processes - with applications of field-wide oil & gas production system, June 2024 (Equinor).

**Co-supervisor/Host for (incomplete list):**

1. Bjørn Glemmestad, *Optimal operation of integrated processes. Study on heat recovery systems*, Telemark Institute of Technology, Dec. 1997 (Supervisor: Truls Gundersen) (Borealis, Porsgrunn)
2. Michela Mulas, *Modelling and Control of Activated Sludge Processes*, University of Cagliari (Italy), Jan. 2006 (Supervisor: Roberto Baratti) (Univ. Helsinki)
3. Veerayut Lersbamrungsuk, *Development of control structure design and structural controllability for heat exchanger networks*, Kasertart University (Thailand), Jan. 2008 (Supervisor: Thongchai Srinophakun)
4. Junping Cai, *Control of Refrigeration Systems for Trade-off between Energy Consumption and Food Quality Loss*, Aalborg University (Denmark), Aug. 2008 (Supervisor: Jakob Stoustrup) (Danfos, Denmark)

5. M. Nabil, *Optimal selection of sensors and controller parameters for economic optimization of process plants, IIT Madras, India (Supervisor: Sridharakumar Narasimha), Sep. 2014.*
6. Mishiga Vallabhan K G, *Produced water treatment using hydrocyclone Theoretical and experimental studies of novel control schemes, NTNU Trondheim (Supervisor: Christian Holden), May 2022.*

## Present PhD students

1. **David Perez Pineiro (MS NTNU, 2019)** *Optimal operation of energy storage (HighEFF).* From Aug. 2019

## BOOKS

1. S. Skogestad and I. Postlethwaite, “Multivariable feedback control - analysis and design,” Wiley, Chichester, 572 pages (1996); 2nd Edition (2005). (see <http://folk.ntnu.no/skoge/book.html> for more information)
2. S. Skogestad, “Chemical and Energy Process Engineering” CRC Press (Taylor & Francis Group), 450 pages, 2009. (see <http://folk.ntnu.no/skoge/book-cep> for more information)
3. S. Skogestad, “Prosessteknikk. Masse- og energibalanser,” Tapir, Trondheim, 340 pages (2000); 2nd Edition, 380 pages (2003); 3rd Edition 387 pages (2009). (see <http://folk.ntnu.no/skoge/bok.html> for more information)

## Ph.D. THESIS

S. Skogestad, “Studies om robust control of distillation columns,” Ph.D. thesis, California Institute of Technology, Feb. 1987 (452 + 10 pages).

## PUBLICATIONS

2024

1. Optimal measurement-based cost gradient estimate for feedback real-time optimization LF Bernardino, S Skogestad Computers Chemical Engineering, 108815 2024
2. Reinforcement learning based MPC with neural dynamical models S Adhau, S Gros, S Skogestad European Journal of Control, 101048 2024
3. Primaldual feedback-optimizing control with override for real-time optimization R Dirza, S Skogestad Journal of Process Control 138, 103208 3 2024

4. Decentralized control using selectors for optimal steady-state operation with changing active constraints LF Bernardino, S Skogestad *Journal of Process Control* 137, 103194 5 2024
5. Understanding Temperature Profiles of Distillation Columns LM Ranger, IJ Halvorsen, T Grutzner, S Skogestad *Industrial Engineering Chemistry Research* 63 (10), 4533-4546 2024
6. NC-SIMC: Neuro-Controller Simple Internal Model Control EA Costa, S Skogestad, I dos Reis Nogueira 2024
7. Model Predictive Control for Bottleneck Isolation with Unmeasured Faults EM Turan, S Skogestad, J Jhke 2024

2023

1. The theoretical basis of ratio control S Skogestad 2023 AIChE Annual Meeting 1 2023
2. Harnessing Feedback Control Strategy for Improved Core Annular Flow Stability in Heavy Oil Transportation P Lima, E Costa, TPG Mendes, L Schnitman, S Skogestad, I Nogueira 2023 AIChE Annual Meeting 2023
3. Real-Time Optimization with Changing Active Constraints Solved through Decentralized Feedback Control LF Bernardino, S Skogestad 2023 AIChE Annual Meeting 2023
4. Steady-state and dynamic model for recirculating aquaculture systems with pH included AM dos Santos, LF Bernardino, KJK Attramadal, S Skogestad *Aquacultural Engineering* 102, 102346 5 2023
5. Home Energy Management with Dynamic Tariffs and Tiered Peak Power Charges D Pz-Pio, S Skogestad, S Boyd arXiv preprint arXiv:2307.07580 2023
6. Transformed inputs for linearization, decoupling and feedforward control S Skogestad, C Zotica, N Alsop *Journal of process Control* 122, 113-133 13 2023
7. Fast Reinforcement Learning Based MPC based on NLP Sensitivities S Adhau, D Reinhardt, S Skogestad, S Gros *IFAC-PapersOnLine* 56 (2), 11841-11846 1 2023
8. Advanced control using decomposition and simple elements S Skogestad *Annual Reviews in Control* 56, 100903 24 2023
9. Bidirectional inventory control with optimal use of intermediate storage and minimum flow constraints LF Bernardino, S Skogestad *IFAC-PapersOnLine* 56 (2), 2665-2670 5 2023



10. A comparative study of distributed feedback-optimizing control strategies V Aas, R Dirza, D Krishnamoorthy, S Skogestad *Computer Aided Chemical Engineering* 52, 613-618 2023
  11. Decentralized control for optimal operation under changing active constraints LF Bernardino, S Skogestad *Computer Aided Chemical Engineering* 52, 1699-1704 2023
- 2022
1. Optimal Resource Allocation in a Subsea Oil Production Network Using Distributed Feedback-Optimizing Control Based on Primal Decomposition R Dirza, S Skogestad, D Krishnamoorthy 2022 *AICHE Annual Meeting* 2022
  2. Comparing Reinforcement Learning and Bayesian Optimization for Tuning MPC Policies D Pz-Pineiro, S Skogestad 2022 *AICHE Annual Meeting* 2022
  3. Experimental validation of distributed feedback-based real-time optimization in a gas-lifted oil well rig R Dirza, J Matias, S Skogestad, D Krishnamoorthy *Control Engineering Practice* 126, 105253 4 2022
  4. Deoiling Hydrocyclones: An Experimental Study of Novel Control Schemes M Vallabhan KG, C Holden, S Skogestad *SPE Production Operations* 37 (03), 462-474 6 2022
  5. Real-time optimization as a feedback control problema review D Krishnamoorthy, S Skogestad *Computers Chemical Engineering* 161, 107723 45 2022
  6. Bidirectional inventory control with optimal use of intermediate storage C Zotica, K Forsman, S Skogestad *Computers Chemical Engineering* 159, 107677 7 2022
  7. Real-time optimal resource allocation using online primal decomposition R Dirza, M Rizwan, S Skogestad, D Krishnamoorthy *IFAC-PapersOnLine* 55 (21), 31-36 2 2022
  8. Online Feedback-based Optimization with Multi-input Direct Constraint Control R Dirza, S Skogestad *IFAC-PapersOnLine* 55 (7), 149-154 2 2022
  9. Control of steam bottoming cycles using nonlinear input and output transformations for feedforward disturbance rejection C Zotica, RM Monta A Reyes-La, S Skogestad *IFAC-PapersOnLine* 55 (7), 969-974 8\* 2022
  10. Comparison of simple feedback control structures for constrained optimal operation LF Bernardino, D Krishnamoorthy, S Skogestad *IFAC-PapersOnLine* 55 (7), 883-888 4 2022

11. Optimal control of water quality in a recirculating aquaculture system AM dos Santos, KJK Attramadal, S Skogestad IFAC-PapersOnLine 55 (7), 328-333 6 2022
  12. Soft Sensor of Key Components in Recirculating Aquaculture Systems, using Feedforward Networks AM dos Santos, E Karlsen, S Skogestad, KJK Attramadal Computer Aided Chemical Engineering 51, 1495-1500 2022
  13. Systematic Pairing Selection for Economic-oriented Constraint Control R Dirza, S Skogestad Computer Aided Chemical Engineering 51, 1249-1254 2 2022
  14. Optimal operation of heat exchanger networks with changing active constraint regions LF Bernardino, D Krishnamoorthy, S Skogestad Computer Aided Chemical Engineering 49, 421-426 4 2022
  15. Primal-dual feedback-optimizing control with direct constraint control R Dirza, D Krishnamoorthy, S Skogestad Computer Aided Chemical Engineering 49, 1153-1158 3 2022
- 2021
1. Constrained neural networks for approximate nonlinear model predictive control S Adhau, VV Naik, S Skogestad 2021 60th IEEE Conference on Decision and Control (CDC), 295-300 6 2021
  2. Anti-slug control design: Combining first principle modeling with a data-driven approach to obtain an easy-to-fit model-based control FC Diehl, GG Gerevini, TO Machado, AD Quelhas, TK Anzai, T Bitarelli, ... Journal of Petroleum Science and Engineering 207, 109096 4 2021
  3. Optimal Resource Allocation in a Subsea Oil Production Network Using Distributed Feedback-Based RTO R Dirza, S Skogestad, D Krishnamoorthy 2021 AIChE Annual Meeting 2021
  4. Real-time optimal resource allocation and constraint negotiation applied to a subsea oil production network R Dirza, S Skogestad, D Krishnamoorthy SPE Annual Technical Conference and Exhibition?, D021S032R004 2 2021
  5. Control structure selection S Skogestad Encyclopedia of systems and control, 381-394 3 2021
  6. Supervisory control design for balancing supply and demand in a district heating system with thermal energy storage C Zotica, D Pz-Pio, S Skogestad Computers Chemical Engineering 149, 107306 5 2021
  7. Optimal resource allocation using distributed feedback-based real-time optimization R Dirza, S Skogestad, D Krishnamoorthy IFAC-PapersOnLine 54 (3), 706-711 14 2021

8. Input transformation for linearization, decoupling and disturbance rejection with application to steam networks C Zotica, S Skogestad Computer Aided Chemical Engineering 50, 1021-1027 4 2021
9. V Khezri, M Panahi, E Yasari, S Skogestad Application of Surrogate Models as an Alternative to Process Simulation for Implementation of the Self-Optimizing Control Procedure on Large-Scale Process Plants A Natural Gas Industrial Engineering Chemistry Research 60 (13), 4919-4929, 2021
10. Reyes-La, Adriana; Skogestad, Sigurd. Active Constraint Switching with the Generalized Split Range Control Structure using the Baton Strategy. IFAC-PapersOnLine 2021 ;Volum 53.(2) s. 3922-3927
11. C Zotica, D Pz-Pio, S Skogestad Supervisory control design for balancing supply and demand in a district heating system with thermal energy storage Computers Chemical Engineering 149, 107306, 2021
12. Zotica, Cristina; Alsop, Nicholas; Skogestad, Sigurd. Transformed Manipulated Variables for Linearization, Decoupling and Perfect Disturbance Rejection. IFAC-PapersOnLine 2021 ;Volum 53.(2) s. 4052-4057

2020

1. Backi, Christoph Josef; Gravdahl, Jan Tommy; Skogestad, Sigurd. Combined state and parameter estimation for not fully observable dynamic systems. IFAC Journal of Systems and Control 2020 ;Volum 13. s. - NTNU
2. Jahanshahi, Esmail; Krishnamoorthy, Dinesh; Cudas Duarte, Andres; Foss, Bjarne Anton; Skogestad, Sigurd. Plantwide control of an oil production network. Computers and Chemical Engineering 2020 ;Volum 136. s. 1-14 NTNU
3. Jienkulsawad, Prathak; Skogestad, Sigurd; Arpornwichanop, Amornchai. Control structure design of a solid oxide fuel cell and molten carbonate fuel cell integrated system: Bottom-up analysis. Energy Conversion and Management 2020 ;Volum 220. s. 1-10 NTNU
4. Krishnamoorthy, Dinesh; Skogestad, Sigurd. Linear Combination of Gradients as Optimal Controlled Variables. Computer-aided chemical engineering 2020 ;Volum 48. s. 1237-1242 NTNU
5. Krishnamoorthy, Dinesh; Skogestad, Sigurd. Systematic design of active constraint switching using selectors.. Computers and Chemical Engineering 2020 ;Volum 143.

i

6. Real-time Optimal Resource Allocation in an Industrial Symbiotic Network using Transient Measurements, D Krishnamoorthy, C Valli, S Skogestad, 2020 American Control Conference (ACC), 3541-3546
7. Kulangarakalam Gayathrivallabh, Mishiga Vallabhan; Holden, Christian; Skogestad, Sigurd. A First-Principles Approach for Control-Oriented Modeling of De-oiling Hydrocyclones. *Industrial Engineering Chemistry Research* 2020 ;Volum 59. s. 18937-18950
8. Lao-Atiman, Woranunt; Olaru, Sorin; Diop, Sette; Skogestad, Sigurd; Arpornwichanop, Amornchai; Cheacharoen, Rongrong; Kheawhom, Soorathep. Linear parameter-varying model for a refuellable zinc-air battery. *Royal Society Open Science* 2020 ;Volum 7.(12) s. -
9. Reyes-La, Adriana; Skogestad, Sigurd. Multi-input single-output control for extending the operating range: Generalized split range control using the baton strategy. *Journal of Process Control* 2020 ;Volum 91. s. 1-11
10. A Reyes-La, S Skogestad. Systematic design of active constraint switching using classical advanced control structures. *Industrial Engineering Chemistry Research*, Vol. 56 (6), 2229-2241.
11. Transformed Manipulated Variables for Linearization, Decoupling and Perfect Disturbance Rejection, C Zotica, N Alsop, S Skogestad, *IFAC-PapersOnLine* 53 (2), 4052-4057, 2020
12. Zotica, Cristina; Nord, Lars O.; Kov, Jenő; Skogestad, Sigurd. Optimal operation and control of heat to power cycles: A new perspective from a systematic plantwide control approach. *Computers and Chemical Engineering* 2020 ;Volum 141. s. -
13. Zotica, Cristina; Pineiro, David Perez; Skogestad, Sigurd. Optimal Operation and Control of a Thermal Energy Storage System: Classical Advanced Control versus Model Predictive Control. *Computer-aided chemical engineering* 2020 ;Volum 48. s. 1507-1512

2019

1. CJ Backi, S Emebu, S Skogestad, BA Grimes. A simple modeling approach to control emulsion layers in gravity separators *Computer Aided Chemical Engineering* 46, 1159-1164 (2019)
2. IJ Halvorsen, I Dejanovic, Z Olujic, S Skogestad Thermal coupling opportunities for floating natural gas liquefaction plants. *Chemical Engineering Research and Design* 147, 346-353
3. D Krishnamoorthy, K Fjalestad, S Skogestad. Optimal operation of oil and gas production using simple feedback control structures. *Control Engineering Practice* 91, 104107, 1-12

4. D Krishnamoorthy, B Foss, S Skogestad. A Primal decomposition algorithm for distributed multistage scenario model predictive control. *Journal of Process Control* 81, 162-171 1
5. D Krishnamoorthy, E Jahanshahi, S Skogestad. Feedback Real-Time Optimization Strategy Using a Novel Steady-state Gradient Estimate and Transient Measurements. *Industrial Engineering Chemistry Research* 58 (1), 207-216
6. D Krishnamoorthy, J Ryu, S Skogestad A Dynamic Extremum Seeking Scheme Applied to Gas Lift Optimization. *IFAC-PapersOnLine (DYCOPS)*, Vol. 52, pp. 802-807 (2019)
7. D Krishnamoorthy, S Skogestad. Online Process Optimization with Active Constraint Set Changes using Simple Control Structures. *Industrial Engineering Chemistry Research* 58 (30), 13555-13567
8. D Krishnamoorthy, S Skogestad, J Jaschke. Multistage Model Predictive Control with Online Scenario Tree Update using Recursive Bayesian Weighting. 2019 18th European Control Conference (ECC), 1443-1448.
9. A Reyes-La, G Andreassen, LFS Larsen, J Stoustrup, S Skogestad Control structure design for a CO<sub>2</sub>-refrigeration system with heat recovery *Computer Aided Chemical Engineering* 46, 1243-1248
10. A Reyes-La, S Skogestad. Multiple-Input Single-Output Control for Extending the Steady-State Operating Range - Use of Controllers with Different Setpoints. *Processes* 7 (12), 941
11. A Reyes-La, CF Zotica, LK Forsman, S Skogestad. Systematic Design of Split Range Controllers. *International Federation of Automatic Control, IFAC-PapersOnLine (DYCOPS)*, Vol. 51, 898-903.
12. J Straus, D Krishnamoorthy, S Skogestad. On combining self-optimizing control and extremum-seeking control - Applied to an ammonia reactor case study. *Journal of Process Control* 78, 78-87
13. J Straus, S Skogestad. A new termination criterion for sampling for surrogate model generation using partial least squares regression. *Computers Chemical Engineering* 121, 75-85
14. A Torgashov, S Skogestad. The use of first principles model for evaluation of adaptive soft sensor for multicomponent distillation unit. *Chemical Engineering Research and Design* 151, 70-78
15. C Zotica, LO Nord, J Kov, S Skogestad Optimal Operation and Control of Heat-to-Power Cycles: a New Perspective using a Systematic Plantwide Control Approach *Computer Aided Chemical Engineering* 46, 1429-1434 (2019)

2018

1. CJ Backi, JT Gravdahl, S Skogestad. Simple method for parameter identification of a nonlinear Greitzer compressor model. *IFAC-PapersOnLine* 51 (13), 198-203
2. CJ Backi, BA Grimes, S Skogestad. A Control-and Estimation-Oriented Gravity Separator Model for Oil and Gas Applications Based upon First-Principles. *Industrial Engineering Chemistry Research* 57 (21), 7201-7217
3. CJ Backi, D Krishnamoorthy, A Verheyleweghen, S Skogestad. Combined nonlinear moving horizon estimation and model predictive control applied to a compressor for active surge control. 2018 IEEE Conference on Control Technology and Applications (CCTA), 1552-1557
4. CJ Backi, D Krishnamoorthy, S Skogestad. Slug handling with a virtual harp based on nonlinear predictive control for a gravity separator. *IFAC-PapersOnLine* 51 (8), 120-125
5. CJ Backi, S Skogestad. Virtual inflow estimation with simplified tuning using cascaded and Kalman-like least squares observers. *Computer Aided Chemical Engineering* 43, 1153-1158
6. H Bonnowitz, J Straus, D Krishnamoorthy, E Jahanshahi, S Skogestad. Control of the Steady-State Gradient of an Ammonia Reactor using Transient Measurements. *Computer Aided Chemical Engineering* 43, 1111-1116
7. P Daoutidis, JH Lee, I Harjunkoski, S Skogestad, M Baldea, C Georgakis. Integrating operations and control: A perspective and roadmap for future research. *Computers Chemical Engineering* 115, 179-184
8. Grimholt, Chriss; Skogestad, Sigurd; "Should we forget the Smith Predictor?", 3rd IFAC Conference on Advances in PID Control, Ghent, Belgium, 9-11 May 2018, Elsevier IFAC Publications / IFAC Proceedings series (ISSN 1474-6670), Vol. 51 (4), 769-774, 2018 .
9. C Grimholt, S Skogestad. Optimal PI and PID control of first-order plus delay processes and evaluation of the original and improved SIMC rules. *Journal of Process Control* 70, 36-46
10. C Grimholt, S Skogestad. Optimization of fixed-order controllers using exact gradients. *Journal of Process Control* 71, 130-138
11. IJ Halvorsen, I Dejanovic, Z Olujić, S Skogestad. Dividing wall columns for natural gas liquefaction plants. *CHEMICAL ENGINEERING TRANSACTIONS* / Brunazzi, Elisabetta ; Sorensen, Eva (eds). AIDIC (ISBN: 978-88-95608-66-2). Conference Distillation and Absorption 2018, Firenze, Italy, 16-19.9.2018

12. S Jia, X Qian, X Yuan, S Skogestad. Control structure comparison for three-product Petlyuk column. *Chinese Journal of Chemical Engineering* 26 (8), 1621-1630
13. D Krishnamoorthy, MA Aguiar, B Foss, S Skogestad A Distributed Optimization Strategy for Large Scale Oil and Gas Production Systems. 2018 IEEE Conference on Control Technology and Applications (CCTA), 521-526
14. D Krishnamoorthy, B Foss, S Skogestad. Steady-state real-time optimization using transient measurements. *Computers Chemical Engineering* 115, 34-45
15. D Krishnamoorthy, B Foss, S Skogestad. A distributed algorithm for scenario-based model predictive control using primal decomposition. *IFAC-PapersOnLine* 51 (18), 351-356
16. D Krishnamoorthy, E Jahanshahi, S Skogestad. Gas-lift Optimization by Controlling Marginal Gas-Oil Ratio using Transient Measurements. *IFAC-PapersOnLine* 51 (8), 19-24
17. Improving scenario decomposition for multistage mpc using a sensitivity-based path-following algorithm. D Krishnamoorthy, E Suwartadi, B Foss, S Skogestad, J Jhke. *IEEE control systems letters* 2 (4), 581-586
18. D Krishnamoorthy, M Thombre, S Skogestad, J Jhke. Data-driven Scenario Selection for Multistage Robust Model Predictive Control. *IFAC-PapersOnLine* 51 (20), 462-468
19. A Reyes-La, CJ Backi, S Skogestad. Improved PI control for a surge tank satisfying level constraints. *IFAC-PapersOnLine*, 51 (4): 835-840
20. A Reyes-La, C Zotica, T Das, D Krishnamoorthy, S Skogestad. Changing between Active Constraint Regions for Optimal Operation: Classical Advanced Control versus Model Predictive Control. *Computer Aided Chemical Engineering* 43, 1015-1020
21. A Reyes-La, C Zotica, S Skogestad. Optimal operation with changing active constraint regions using classical advanced control. *IFAC-PapersOnLine* 51 (18), 440-445
22. Alejandro Regalado-Mez, Juan Mentado-Morales, Carlos Estrada Vuez, Gerardo Martz-Villa, Mario E Cordero, Luis G Zte, Sigurd Skogestad, Ever Peralta-Reyes. Modeling and Hydraulic Characterization of a Filter-Press-Type Electrochemical Reactor by Using Residence Time Distribution Analysis and Hydraulic Indices. *International Journal of Chemical Reactor Engineering* 16 (10)
23. J Straus, S Skogestad. Surrogate model generation using self-optimizing variables. *Computers Chemical Engineering* 119, 143-151

24. J Straus, S Skogestad. Self-Optimizing Control in Chemical Recycle Processes. *IFAC-PapersOnLine* 51 (18), 536-541
25. B Sun, S Skogestad, J Lu, W Zhang. Dual SIMC-PI Controller Design for Cascade Implement of Input Resetting Control with Application. *Industrial Engineering Chemistry Research* 57 (20), 6947-6955
26. A Torgashov, S Skogestad, D An. A Rigorous Model for Evaluating Moving Window Soft Sensors for Industrial Distillation Processes. *CHEMICAL ENGINEERING* 69. DOI: 10.3303/CET1869082
27. L Ye, S Skogestad. Dynamic self-optimizing control for unconstrained batch processes. *Computers Chemical Engineering* 117, 451-468

2017

1. Backi, Christoph Josef; Skogestad, Sigurd. A Simple Dynamic Gravity Separator Model for Separation Efficiency Evaluation Incorporating Level and Pressure Control. 2017 American Control Conference; 2017-05-24 - 2017-05-26
2. Backi, Christoph Josef; Skogestad, Sigurd. A Simple Dynamic Gravity Separator Model for Separation Efficiency Evaluation Incorporating Level and Pressure Control. *American Control Conference (ACC) 2017* s. 2823-2828
3. Backi, Christoph Josef; Skogestad, Sigurd. Virtual inflow monitoring for a three phase gravity separator. *Proceedings of the IEEE Conference on Control Applications 2017* s. 1499-1504
4. Bisgaard, Thomas; Skogestad, Sigurd; Abildskov, Jens; Huusom, Jakob Kjbsted. Optimal operation and stabilising control of the concentric heat-integrated distillation column (HIDiC). *Computers and Chemical Engineering 2017 ;Volum 96.* s. 196-211
5. L Ye, Y Cao, S Skogestad Global Self-Optimizing Control for Uncertain Constrained Process Systems *IFAC-PapersOnLine* 50 (1), 4672-4677
6. Jahanshahi, Esmail; Backi, Christoph Josef; Skogestad, Sigurd. Anti-slug control based on a virtual flow measurement. *Flow Measurement and Instrumentation 2017 ;Volum 53.* s. 299-307
7. E Jahanshahi, S Skogestad Nonlinear control solutions to prevent slugging flow in offshore oil production *Journal of Process Control* 54, 138-151
8. P Jienkulsawad, S Skogestad, A Arpornwichanop. Control structure design of a solid oxide fuel cell and a molten carbonate fuel cell integrated system: Top-down analysis *Energy Conversion and Management* 152, 88-98, 2017



9. Krishnamoorthy, Dinesh; Foss, Bjarne Anton; Skogestad, Sigurd. Gas-lift Optimization under Uncertainty. 27th European Symposium on Computer Aided Process Engineering; 2017-10-02 - 2017-10-05; Computer Aided Chemical Engineering, Vol. 40, 1753-1758
10. Krishnamoorthy, Dinesh; Foss, Bjarne Anton; Skogestad, Sigurd. Model predictive control under structural uncertainty. AIChE Annual meeting; 2017-10-29 - 2017-11-03
11. Krishnamoorthy, Dinesh; Straus, Julian; Skogestad, Sigurd. On combining self-optimizing control and extremum seeking control - applied to ammonia reactor case study. AIChE Annual meeting 2017; 2017-10-29
12. Kristoffersen, Torstein Thode; Holden, Christian; Skogestad, Sigurd; Ege-land, Olav. Control-Oriented Modelling of Gas-Liquid Cylindrical Cyclones. American Control Conference (ACC) 2017 ;Volum 2017-May. s. 2829-2836
13. S Pedersen, E Jahanshahi, Z Yang, S Skogestad. Comparison of Model-Based Control Solutions for Severe Riser-Induced Slugs, Energies, 2017 - mdpi.com
14. Thongchai Rohitathisa Srinophakun, Niao Prajimtis, Thanawat Upien-pong, Sigurd Skogestad. Passive Controller Design of Mass Exchanger Network. King Mongkuts University of Technology North Bangkok International Journal of Applied Science and Technology. Volume 10, Issue 1
15. J Straus, S Skogestad. Use of Latent Variables to Reduce the Dimension of Surrogate Models, Computer Aided Chemical Engineering 40, 445-450
16. J Straus, S Skogestad. Variable reduction for surrogate modelling, Proceedings of Foundations of Computer-Aided Process Operations
17. J Sulc, S Skogestad. A systematic approach for airflow velocity control design in road tunnels. Control Engineering Practice 69, 61-72, 2017
18. Ohrem, Sveinung Johan; Holden, Christian; Jahanshahi, Esmail; Skogestad, Sigurd. L1 Adaptive Anti-Slug Control. American Control Conference 2017; 2017-05-24 - 2017-05-26
19. Soltesz, Kristian; Grimholt, Chriss; Skogestad, Sigurd. Simultaneous design of proportional-integral-derivative controller and measurement filter by optimisation. IET Control Theory Applications 2017 ;Volum 11.(3) s. 341-348
20. J Straus, S Skogestad Economic NMPC for heat-integrated chemical reactors Process Control (PC), 2017 21st International Conference on, 309-314

2016

1. Backi, Christoph Josef; Gravdahl, Jan Tommy; Skogestad, Sigurd. Robust control of a two-state Greitzer compressor model by state-feedback linearization. 2016 IEEE Multi-Conference on Systems and Control; 2016-09-19 - 2016-09-22
2. Backi, Christoph Josef; Gravdahl, Jan Tommy; Skogestad, Sigurd. Robust control of a two-state Greitzer compressor model by state-feedback linearization. Proceedings of the IEEE Conference on Control Applications 2016
3. Backi, Christoph Josef; Skogestad, Sigurd. A gravity separator model for liquid level control and purity evaluation of oil and water phases. 20th Nordic Process Control Workshop; 2016-08-24 - 2016-08-26
4. Bisgaard, Thomas; Skogestad, Sigurd; Huusom, Jakob Kjbsted; Abildskov, Jens. Optimal Operation and Stabilising Control of the Concentric Heat-Integrated Distillation Column. IFAC-PapersOnLine 2016 ;Volum 49.(7) s. 747-752
5. de Oliveira, Vinicius; Jhke, Johannes Ernst Peter; Skogestad, Sigurd. Optimal operation of energy storage in buildings: Use of the hot water system. Journal of Energy Storage 2016 ;Volum 5. s. 102-112
6. de Oliveira, Vinicius; Jaschke, Johannes; Skogestad, Sigurd. Null-space method for optimal operation of transient processes. IFAC-PapersOnLine 2016 ;Volum 49.(7) s. 418-423
7. M Francisco, S Skogestad, P Vega Model predictive control for the self-optimized operation in wastewater treatment plants: Analysis of dynamic issues Computers Chemical Engineering 82, 259-272. 2017.
8. Grimholt, Chriss; Skogestad, Sigurd. Optimal PID control of double integrating processes. IFAC-PapersOnLine 2016 ;Volum 49.(7) s. 127-132
9. Halvorsen, Ivar Johan; Dejanovic, Igor; Mar Knut Arild; Olujić, Zarko; Skogestad, Sigurd. Dividing-Wall Column for Fractionation of Natural Gas Liquids in Floating Liquefied Natural Gas Plants. Chemical Engineering Technology 2016 ;Volum 39.(12) s. 2348-2354
10. Krishnamoorthy, Dinesh; Foss, Bjarne Anton; Skogestad, Sigurd. Real-Time Optimization under Uncertainty Applied to a Gas Lifted Well Network. Processes 2016 ;Volum 4. s. -
11. Qian, Xing; Jia, Shengkun; Skogestad, Sigurd; Yuan, Xigang. Comparison of stabilizing control structures for dividing wall columns. IFAC-PapersOnLine 2016 ;Volum 49.(7) s. 729-734

12. Qian, Xing; Jia, Shengkun; Skogestad, Sigurd; Yuan, Xigang. Control structure selection for four-product Kaibel column. *Computers and Chemical Engineering* 2016 ;Volum 93. s. 372-381
  13. Qian, Xing; Jia, Shengkun; Skogestad, Sigurd; Yuan, Xigang; Luo, Yiqing. Model Predictive Control of Reactive Dividing Wall Column for the Selective Hydrogenation and Separation of a C3 Stream in an Ethylene Plant. *Industrial Engineering Chemistry Research* 2016 ;Volum 55.(36) s. 9738-9748
  14. D Pakiov Fikar, S Skogestad Modeling of carbon dioxide removal using membrane contactors *Cybernetics & Informatics (KI)*, 2016, 1-6
  15. Regalado Mendez, Alejandro; Skogestad, Sigurd; Natividad, Reyna; Romero, Rubi. Biodiesel production by reactive flash: A numerical simulation. *International Journal of Chemical Engineering* 2016 ;Volum 2016.
  16. Regalado-Mendez, Alejandro; Romero, Rubi; Natividad, Reyna; Skogestad, Sigurd. Plant-wide control of a reactive distillation column on biodiesel production. *Advances in Intelligent Systems and Computing* 2016 ;Volum 466. s. 107-117
  17. JD le Roux, S Skogestad, IK Craig Plant-wide control of grinding mill circuits: Top-down analysis *IFAC-PapersOnLine* 49 (20), 72-77, 2016
  18. Straus, Julian; Skogestad, Sigurd. Minimizing the complexity of surrogate models for optimization. *Computer-aided chemical engineering* 2016 ;Volum 38. s. 289-294
  19. Torgashov, Andrei; Skogestad, Sigurd; Kozlov, Alexey. Comparative Study of Multicomponent Distillation Static Estimators Based on Industrial and Rigorous Model Datasets. *IFAC-PapersOnLine* 2016 ;Volum 49.(7) s. 1187-1192
- 2015
1. Bar, Nadav; Skogestad, Sigurd; Mar, Jose M.; Ulanovsky, Nachum; Yovel, Yossi. A Sensory-Motor Control Model of Animal Flight Explains Why Bats Fly Differently in Light Versus Dark. *PLoS biology* 2015 ;Volum 13.(1)
  2. Chatrattanawet, Narissara; Skogestad, Sigurd; Arpornwichanop, Amornchai. Control structure design and dynamic modeling for a solid oxide fuel cell with direct internal reforming of methane. *Chemical engineering research design* 2015 ;Volum 98. s. 202-211
  3. de Oliveira, Vinicius; Jaschke, Johannes; Skogestad, Sigurd. An autonomous approach for driving systems towards their limit: An intelligent adaptive anti-slug control system for production maximization. *IFAC-PapersOnLine* 2015 ;Volum 48.(6) s. 104-111

4. de Oliveira, Vinicius; Jaschke, Johannes; Skogestad, Sigurd. Neighbouring-extremal control for steady-state optimization using noisy measurements. IFAC-PapersOnLine 2015 ;Volum 48.(8) s. 698-703
5. Francisco, M; Skogestad, Sigurd; Vega, P. Model Predictive Control for the Self-optimized Operation in Wastewater Treatment Plants. Computer-aided chemical engineering 2015 ;Volum 37. s. 1703-1708
6. Francisco, M; Skogestad, Sigurd; Vega, P. Model predictive control for the self-optimized operation in wastewater treatment plants: Analysis of dynamic issues. Computers and Chemical Engineering 2015 ;Volum 82. s. 259-272
7. Francisco, M; Vega, P; Skogestad, Sigurd. Nonlinear offset free MPC for self-optimizing control in wastewater treatment plants. I: 19th International Conference on System Theory, Control and Computing (ICSTCC). IEEE conference proceedings 2015 ISBN 978-1-4799-8481-7. s. 390-395
8. Grimholt, Chriss; Skogestad, Sigurd. Improved Optimization-based Design of PID Controllers Using Exact Gradients. Computer-aided chemical engineering 2015 ;Volum 37. s. 1751-1756
9. Grimholt, Chriss; Skogestad, Sigurd. Optimization of oil field production under gas coning conditions using the optimal closed-loop estimator. IFAC-PapersOnLine 2015 ;Volum 48.(6) s. 39-44
10. Jahanshahi, Esmail; Skogestad, Sigurd. Anti-slug control solutions based on identified model. Journal of Process Control 2015 ;Volum 30. s. 58-68
11. Le, Quang Khoa; Halvorsen, Ivar Johan; Pajalic, Oleg; Skogestad, Sigurd. Dividing wall columns for heterogeneous azeotropic distillation. Chemical engineering research design 2015 ;Volum 99. s. 111-119
12. Minasidis, Vladimiro; Skogestad, Sigurd; Kaistha, Nitin. Simple Rules for Economic Plantwide Control. Computer-aided chemical engineering 2015 ;Volum 37. s. 101-108
13. Regalado-Mendez, Alejandro; Romero, Rubi Romero; Range, Reyna Natividad; Skogestad, Sigurd. Biodiesel production in stirred tank chemical reactors: A numerical simulation. Lecture Notes in Electrical Engineering 2015 ;Volum 312. s. 109-116
14. Skogestad, Sigurd. Control Structure Selection. I: Encyclopedia of Systems and Control. Springer 2015 ISBN 9781447150572. s. 2012-2015

## PUBLICATIONS, 2014 and earlier

### International Journals

1. S. Skogestad, "Experience in Norsk Hydro with Cubic Equations of State", *Fluid Phase Equilibria*, **13**, 179-188 (1983).
2. T. Haug-Warberg and S. Skogestad, "Prediction of VLE Behavior in Concentrated Electrolyte Solutions", *Fluid Phase Equilibria*, **13**, 341-350 (1983).
3. M. Morari and S. Skogestad, "Effect of Model Uncertainty on Dynamic Resilience", *I.Chem.E. Symposium Series*, **No. 92**, 493-504 (1985). (From PSE 85: The Use of Computers in Chemical Engineering, Cambridge, UK, April 1985).
4. S. Skogestad, T. Gundersen and O. Johnsen, "Compositional Simulation of a Refinery Coker Furnace: An Industrial Example of Two-phase Flow with Chemical Reaction", *Modeling, Identification and Control*, **7**, 25-44 (1986).
5. D.E. Rivera, M. Morari and S. Skogestad, "Internal Model Control 4. PID Controller Design", *Ind. & Eng. Chem. Process Des. Dev.*, **25**, 252-265 (1986).
6. S. Skogestad and M. Morari, "Design of Resilient Processing Plants – IX. Effect of Model Uncertainty on Dynamic Resilience", *Chem. Eng. Sci.* **42**, 7, 1765-1780 (1987).
7. S. Skogestad and M. Morari, "Letter to the Editor on pairing selection for decentralized control", *AIChE Journal*, **33**, 7, 701-702 (1987).
8. S. Skogestad and M. Morari, "The Effect of Disturbance Directions on Closed Loop Performance", *Ind. & Eng. Chem. Research*, **26**, 10, 2029-2035 (1987) .
9. S. Skogestad and M. Morari, "Control Configuration Selection for Distillation Columns", *AIChE Journal*, **33**, 10, 1620-1635 (1987).
10. S. Skogestad and M. Morari, "The Dominant Time Constant for Distillation Columns", *Comp. & Chem. Eng.*, **11**, 6, 607-617 (1987).
11. S. Skogestad and M. Morari, "Implications of Large RGA-Elements on Control Performance", *Ind. & Eng. Chem. Research*, **26**, 11, 2323-2330 (1987). (Also see *correction* to Eq. 13 in **27**, 5, 898 (1988)).
12. S. Skogestad and M. Morari, "A Systematic Approach to Distillation Column Control", *I.Chem.E. Symposium Series*, **No. 104**, A71-A86 (1987) (From Distillation and Absorption 87, Brighton, UK, Sept. 1987).
13. S. Skogestad and M. Morari, "LV-Control of a High-Purity Distillation Column", *Chem. Eng. Sci.*, **43**, 1, 33-48 (1988).

14. S. Skogestad, M. Morari and J.C. Doyle, "Robust Control of IllConditioned Plants: High-Purity Distillation", *IEEE Trans. Autom. Control*, **33**, 12, 1092-1105 (1988). (Also see *correction* to  $\mu$ -optimal controller in **34**, 6, 672 (1989)).
15. S. Skogestad and M. Morari, "Some New Properties of the Structured Singular Value", *IEEE Trans. Autom. Control*, **33**, 12, 1151-1154 (1988).
16. S. Skogestad and M. Morari, "Understanding the Dynamic Behavior of Distillation Columns", *Ind. & Eng. Chem. Research*, **27**, 10, 1848-1862 (1988).
17. S. Skogestad and M. Morari, "Robust Performance of Decentralized Control Systems by Independent Designs", *Automatica*, **25**, 1, 119-125 (1989).
18. S. Skogestad, P. Lundström and E. W. Jacobsen, "Selecting the best distillation control configuration", *AIChE Journal*, **36**, 5, 753-764 (1990).
19. S. Skogestad, P. Lundström and E. W. Jacobsen, "Reply to comments by J. Riggs", *AIChE Journal*, **36**, 7, 1125-1126 (1990).
20. S. Skogestad and P. Lundström, "Mu-optimal LV-control of distillation columns", *Computers and Chem. Engng.*, **14**, 4/5, 401-413 (1990).
21. S. Skogestad, E. W. Jacobsen and M. Morari, "Inadequacy of steady-state analysis for feedback control: Distillate-bottom control of distillation columns.", *Ind. Eng. Chem. Res.*, **29**, 12, 2339-2346 (1990).
22. E. W. Jacobsen and S. Skogestad, "Multiple Steady States in Ideal TwoProduct Distillation", *AIChE Journal*, **37**, 4, 499-511 (1991).
23. S. Skogestad, "Consistency of Steady-State Models Using Insight about Extensive Variables", *Ind. Eng. Chem. Res.*, **30**, 4, 654-661 (1991).
24. S. Skogestad and E. Wolff, "TANKSPILL - A Process Control Game", *CACHE News*, Published by CACHE Corporation, Austin, Texas. No.32, 1-4, Spring 1991.
25. S. Skogestad, E.W. Jacobsen and M. Morari, Comments on "Tuning Controllers on Distillation Columns with the Distillate-Bottoms Structure" (Correspondence), *Ind. Eng. Chem. Res.*, **30**, 2019-2020 (1991).
26. T. Mejdell and S. Skogestad, "Estimation of Distillation Compositions from Multiple Temperature Measurements using Partial-Least-Squares Regression", *Ind. Eng. Chem. Res.*, **30**, 12, 2543-2555 (1991).
27. T. Mejdell and S. Skogestad, "Composition Estimator in a Pilot Plant Distillation Column using Multiple Temperatures", *Ind. Eng. Chem. Res.*, **30**, 12, 2555-2564 (1991).

28. P. Lundström, S. Skogestad and Z-Q. Wang, "Performance weight selection for H-infinity and  $\mu$ -control methods", *Trans. Inst. of Measurement and Control*, **13**, 5, 241-252 (1991).
29. Elling W. Jacobsen, Lionel Laroche, Manfred Morari, Sigurd Skogestad and Henrik W. Andersen, "Robust Control of Homogeneous Azeotropic Distillation Columns", *AIChE Journal*, **37**, 12, 1810-24 (1991).
30. S. Skogestad, M. Hovd and P. Lundström, "Simple frequency-dependent tools for analysis of inherent control limitations", *Modeling, Identification and Control*, **12**, 4, 159-177 (1991).
31. K. W. Mathisen, S. Skogestad and E. Wolff, "Bypass Selection for Control of Heat Exchanger Networks", *Computers and Chem. Engng.*, **16**, Suppl., S263-S272 (1992). (Supplement from symposium ESCAPE-1, Elsinore, Denmark, May 1992).
32. M. Hovd and S. Skogestad, "Simple Frequency-Dependent Tools for Control System Analysis, Structure Selection and Design", *Automatica*, **28**, 5, 989-996 (1992).
33. S. Skogestad and M. Morari, "Variable Selection for Decentralized Control", *Modeling, Identification and Control*, **13**, 2, 113-125 (1992) (reprint of Paper 128c presented at AIChE Annual Meeting, Washington DC, Nov. 1988; see paper 11 in the list of conference publications).
34. E. Sørensen Leversund, S. Macchietto, G. Stuart and S. Skogestad, "Optimal control and on-line operation of reactive batch distillation", *Computers and Chem. Engng.*, **18**, Suppl., S391-S395 (1994). (Supplement from symposium ESCAPE-3, Graz, Austria, July 5-7, 1993). Extended version in: *Computers and Chem. Engng.*, **20**, 1491-1498 (1996).
35. K.W. Mathisen, M. Morari and S. Skogestad, "Dynamic models for heat exchangers and heat exchanger networks", *Computers and Chem. Engng.*, **18**, Suppl., S459-S463 (1994). (Supplement from symposium ESCAPE-3, Graz, Austria, July 5-7, 1993).
36. J. Morud and S. Skogestad, "Effects of recycle on dynamics and control of chemical processing plants", *Computers and Chem. Engng.*, **18**, Suppl., S529-S534 (1994). (Supplement from symposium ESCAPE-3, Graz, Austria, July 5-7, 1993).
37. E.W. Jacobsen and S. Skogestad, "Dynamics and control of unstable distillation columns", *Modeling, Identification and Control*, **14**, 2, 59-72 (1993).
38. Z-Q. Wang and S. Skogestad, "Robust control of time-delay systems using the Smith predictor", *Int. J. Control*, **57**, 6, 1405-1420 (1993).

39. M. Hovd and S. Skogestad, "Improved independent design of robust decentralized controllers", *J. of Process Control*, **3**, 43-51 (1993). (Reprinted in *Modeling, Identification and Control*, **15**, 93-107, 1994.)
40. T. Mejdell and S. Skogestad, "Output Estimation Using Multiple Secondary Measurements: High-Purity Distillation", *AIChE J.*, **39**, 10, 1641-1653 (1993).
41. M. Hovd and S. Skogestad, "Procedure for regulatory control structure selection with application to the FCC process", *AIChE J.*, **39**, 12, 1938-1953 (1993).
42. E. W. Jacobsen and S. Skogestad, "Inconsistencies in Dynamic Models for Ill-Conditioned Plants: Application to Low-order Models of Distillation Columns", *Ind.Eng.Chem.Res.*, **33**, 3, 631-640 (1994).
43. Z.-Q. Wang, P. Lundström and S. Skogestad, "Representation of uncertain time delays in the  $H_\infty$  framework", *Int. J. Control*, **59**, 3, 627-638 (1994).
44. M. Hovd and S. Skogestad, "Control of Symmetrically Interconnected Plants", *Automatica*, **30**, 6, 957-973 (1994).
45. E.W Jacobsen and S. Skogestad, "Instability of distillation columns", *AIChE Journal*, **40**, 9, 1466-1478 (1994).
46. M. Hovd and S. Skogestad, "Sequential design of decentralized controllers", *Automatica*, **30**, 10, 1601-1607 (1994).
47. M. Hovd and S. Skogestad, "Pairing criteria for decentralized control of unstable plants", *Ind.Eng.Chem.Res.*, **33**, 9, 2134-2139 (1994).
48. E. Sørensen and S. Skogestad, "Control Strategies for Reactive Batch Distillation", *J. Proc. Cont.*, **4**, 4, 205-217 (1994).
49. E.A. Wolff and S. Skogestad, "Operation of integrated three-product (Petlyuk) distillation columns", *Ind.Eng.Chem.Res.*, **34**, 6, 2094-2103 (1995).
50. S. Skogestad and M. Hovd, "Letter to the editor on decentralized versus multivariable control", *J. Process Control*, **5**, 399-400 (1995).
51. P. Lundström, J.H. Lee, M. Morari and S. Skogestad, "Limitations of Dynamic Matrix Control", *Comp. & Chem. Engng.*, **19**, 409-421, 1995.
52. P. Lundström and S. Skogestad, "Opportunities and difficulties with  $5 \times 5$  distillation control", *J. Process Control*, **5**, 249-261, 1995.
53. E.W. Jacobsen and S. Skogestad, "Multiple steady-states and instability in distillation – implications for operation and control", *Ind.Eng.Chem.Res.*, **34**, 4395-4405, 1995.



54. S. Skogestad, "A procedure for SISO controllability analysis – with application to design of pH neutralization processes", *Comp.Chem.Engng.*, **20**, 373-386, 1996.
55. E.A. Wolff and S. Skogestad, "Temperature cascade control of distillation columns", *Ind.Eng.Chem.Res.*, **35**, 475-484, 1996.
56. J. Morud and S. Skogestad, "Dynamic behaviour of integrated plants", *J. Process Control*, **6**, 145-146, 1996.
57. S. Skogestad and K. Havre, "The use of the RGA and condition number as robustness measures", *Computers and Chem. Engng.*, **20**, Suppl., S1005-1010 (1996). (Supplement from symposium ESCAPE-6, Rhodes, Greece, May 26-29 , 1996).
58. B. Wittgens, R. Litto, E. Sørensen and S. Skogestad, "Total reflux operation of multivessel batch distillation", *Computers and Chem. Engng.*, **20**, Suppl., S1041-1046 (1996). (Supplement from symposium ESCAPE-6, Rhodes, Greece, May 26-29 , 1996).
59. E. Sørensen and S. Skogestad, "Optimal startup procedures for batch distillation", *Computers and Chem. Engng.*, **20**, Suppl., S1257-1262 (1996). (Supplement from symposium ESCAPE-6, Rhodes, Greece, May 26-29 , 1996).
60. S. Skogestad and E.A. Wolff, "Controllability measures for disturbance rejection", *Modeling, Identification and Control*, **17**, 167-182 (1996). (Reprint of paper from IFAC Workshop on Interactions between process design and control, London, Sept. 1992; see paper 54 in the list of Conference publications).
61. E. Sørensen and S. Skogestad, "Comparison of regular and inverted batch distillation", *Chem. Eng. Sci.*, **51**, 4949-4962, 1996.
62. R.D. Braatz, M. Morari and S. Skogestad, "Loopshaping for robust performance", *Int. J. of Robust and Nonlinear Control*, **6**, 805-823, 1996.
63. M. Hovd, R.D. Braatz and S. Skogestad, "SVD Controllers for  $H_2$ -,  $H_\infty$ -, and  $\mu$ -optimal control", *Automatica*, **33**, 433-439, 1997.
64. S. Skogestad, B. Wittgens, R. Litto and E. Sørensen, "Multivessel batch distillation", *AIChE J.*, 971-978, 1997.
65. Y. Zhao and S. Skogestad, "Comparison of various control configurations for continuous bioreactors", *Ind.Eng.Chem.Res.*, **36**, 697-705, 1997.
66. S. Skogestad, "Dynamics and Control of Distillation Columns - A Critical Survey", *Modeling, Identification and Control*, **18**, 177-217, 1997. (Reprint of paper from *IFAC-symposium DYCORN+ '92*, Maryland, Apr. 27-29, 1992)

67. A.C. Christiansen, S. Skogestad and K.M. Lien, "Complex Distillation Arrangements: Extending the Petlyuk ideas", *Computers and Chem. Engng.*, **21**, Suppl., S237-S242 (1997). (Supplement from symposium PSE-97/ESCAPE-7, Trondheim, Norway, 25-29 May 1997).
68. I.J. Halvorsen and S. Skogestad, "Optimizing control of Petlyuk distillation: Understanding the steady-state behavior", *Computers and Chem. Engng.*, **21**, Suppl., S249-S254 (1997). (Supplement from symposium PSE-97/ESCAPE-7, Trondheim, Norway, 25-29 May 1997).
69. B. Glemmestad, S. Skogestad and T. Gundersen, "On-line optimization and choice of optimization variables for control of heat exchanger networks", *Computers and Chem. Engng.*, **21**, Suppl., S379-S384 (1997). (Supplement from symposium PSE-97/ESCAPE-7, Trondheim, Norway, 25-29 May 1997).
70. S. Skogestad, "Dynamics and control of distillation columns - A tutorial introduction", *Trans IChemE, Part A (Chemical Engineering Research and Design)*, **75**, Sept. 1997, 539-562 (plenary paper from symposium *Distillation and Absorption 97*, Maastricht, Netherlands, 8-10 Sept. 1997.)
71. J.C. Morud and S. Skogestad, "Analysis of instability in industrial ammonia reactors", *AIChE Journal*, **44**, 888-895 (1998).
72. K. Havre and S. Skogestad, "Effect of RHP zeros and poles on the sensitivity functions in multivariable systems", *J. of Process Control*, **8**, 155-164 (1998).
73. P. Lundstrom, S. Skogestad and J.C. Doyle, "Two degree of freedom controller design for an ill-conditioned distillation process using mu-synthesis", *IEEE Trans. Contr. Syst. Tech.*, **7** (1), 12-21 (1999).
74. T.I. Malik, S. Skogestad "Summary of discussion session on 'industry-academic interactions and open standards'", *Computers and Chem. Engng.*, **23**, 451-455 (1999).
75. B. Glemmestad, S. Skogestad and T. Gundersen, "Optimal operation of heat exchanger networks", *Computers and Chem. Engng.*, **23**, 509-522 (1999).
76. I.J. Halvorsen and S. Skogestad, "Optimal operation of Petlyuk distillation: steady-state behavior", *J. Proc. Control*, **9**, 407-424 (1999).
77. E.K. Hilmen, V.N. Kiva and S. Skogestad, "Analysis of closed multivesel batch distillation of ternary mixtures using elementary VLE cells", *Computers and Chem. Engng.*, **23** (Suppl.), S347-S350 (1999).
78. B. Wittgens and S. Skogestad, "Evaluation of dynamic models of distillation columns with emphasis on the initial response" *Modeling, Identification and Control*, **21**, 83-103 (2000).

79. I.J. Halvorsen, M. Serra and S. Skogestad, "Evaluation of self-optimising control structures for an integrated Petlyuk distillation column", *Hung. J. of Ind.Chem.*, **28**, 11-15 (2000).
80. B. Wittgens and S. Skogestad, "Closed operation of multivessel batch distillation: Experimental verification", *AIChE J.*, **46**, 1209-1217 (2000).
81. S. Skogestad "Plantwide control: the search for the self-optimizing control structure", *J. Proc. Control*, **10**, 487-507 (2000).
82. S. Skogestad, "Self-optimizing control: the missing link between steady-state optimization and control", *Comp.Chem.Engng.*, **24**, 569-575 (2000).
83. A. Faanes and S. Skogestad, "A systematic approach to the design of buffer tanks", *Comp.Chem.Engng.*, **24**, 1395-1401 (2000).
84. T. Larsson and S. Skogestad, "Plantwide control: A review and a new design procedure" *Modeling, Identification and Control*, **21**, 209-240 (2000).
85. K. Havre and S. Skogestad, "Achievable performance of multivariable systems with unstable zeros and poles", *Int. J. Control*, **74**, 1131-1139 (2001).
86. T. Larsson, K. Hestetun, E. Hovland, and S. Skogestad, "Self-Optimizing Control of a Large-Scale Plant: The Tennessee Eastman Process", *Ind. Eng. Chem. Res.*, **40** (22), 4889-4901 (2001).
87. E.K. Hilmen, V.N. Kiva and S. Skogestad, "Topology of ternary VLE diagrams: Elementary cells", *AIChE Journal*, **48** (22), 752-759 (2002).
88. S. Skogestad, "Simple rules for model reduction and PID controller tuning", *J. Process Control*, **13**, 291-309 (2003). (Also see *corrections* in **14**, 465 (2004)).  
(Paper has also been reprinted with some additions in *Modeling, Identification and control*, **25** (2), 85-120 (2004)).
89. I.J. Halvorsen and S. Skogestad, "Minimum Energy Consumption in Multicomponent Distillation. Part 1. Vmin Diagram for a Two-Product Column", *Ind. Eng. Chem. Res.*, **42** (3), 594-604 (2003).
90. I.J. Halvorsen and S. Skogestad, "Minimum Energy Consumption in Multicomponent Distillation. Part 2. Three-Product Petlyuk Arrangements", *Ind. Eng. Chem. Res.*, **42** (3), 610-615 (2003).
91. I.J. Halvorsen and S. Skogestad, "Minimum Energy Consumption in Multicomponent Distillation. Part 3. More Than Three Products and Generalized Petlyuk Arrangements", *Ind. Eng. Chem. Res.*, **42** (3), 616-629 (2003).
92. K.L. Wu, C.C. Yu, W.L. Luyben and S. Skogestad, "Reactor/separator processes with recycles-2. Design for composition control", *Comp. Chem. Engng.*, **27** (3), 401-421 (2003).

93. T. Larsson, M.S. Govatsmark, S. Skogestad, and C.C. Yu, "Control structure selection for reactor, separator and recycle processes", *Ind. Eng. Chem. Res.*, **42** (6), 1225-1234 (2003).
94. V.N. Kiva, E.K. Hilmen and S. Skogestad, "Azeotropic phase equilibrium diagrams: A survey", *Chem.Eng.Sci.*, **58** (10), 1903-1953 (2003).
95. H.K. Engelen, T. Larsson and S. Skogestad, "Implementation of optimal operation for heat integrated distillation columns", *Trans IChemE, Part A (Chemical Engineering Research and Design)*, **81**, 277-281 (2003).
96. A. Faanes and S. Skogestad, "Buffer Tank Design for Acceptable Control Performance", *Ind. Eng. Chem. Res.*, **42** (10), 2198-2208 (2003).
97. I.J. Halvorsen, S. Skogestad, J.C. Morud and V. Alstad, "Optimal selection of controlled variables", *Ind. Eng. Chem. Res.*, **42** (14), 3273-3284 (2003).
98. K. Havre and S. Skogestad, "Selection of variables for stabilizing control using pole vectors", *IEEE Trans. Autom. Control*, **48** (8), 1393-1398 (2003).
99. A. Faanes and S. Skogestad, "State space realization of model predictive controllers without active constraints", *Modeling, Identification and Control*, **24** (4), 231-244 (2003).
100. S. Skouras and S. Skogestad, "Separation of ternary heteroazeotropic mixtures in a closed multivessel batch distillation-decanter hybrid", *Chemical Engineering and Processing*, **43** (3), 291-304 (2004).
101. S. Skogestad, "Control structure design for complete chemical plants", *Computers and Chemical Engineering*, **28** (1-2), 219-234 (2004).
102. H.K. Engelen and S. Skogestad, "Selecting appropriate control variables for a heat-integrated distillation system with prefractionator", *Computers and Chemical Engineering*, **28** (5), 683-691 (2004).
103. S. Skouras and S. Skogestad, "Time (Energy) Requirements in Closed Batch Distillation Arrangements", *Computers and Chemical Engineering*, **28** (5), 829-837 (2004).
104. A. Faanes and S. Skogestad, "pH-neutralization: integrated process and control design", *Computers and Chemical Engineering*, **28** (8), 1475-1487 (2004).
105. S. Skouras and S. Skogestad, "Time requirements for heteroazeotropic distillation in batch columns", *Computers and Chemical Engineering*, **28** (9), 1689-1700 (2004).

106. I.J. Halvorsen and S. Skogestad, "Shortcut analysis of optimal operation of Petlyuk distillation", *Ind. Eng. Chem. Res.*, **43** (14), 3994-3999 (2004).
107. A. Faanes and S. Skogestad, "Feedforward control under the presence of uncertainty", *European Journal of Control*, **10** (1), 30-46 (2004).
108. S. Skogestad, "Near-optimal operation by self-optimizing control: From process control to marathon running and business systems", *Computers and Chemical Engineering*, **29** (1), 127-137 (2004).
109. A. Faanes and S. Skogestad, "Controller design for serial processes", *Journal of Process Control*, **15** (3), 259-271 (2005).
110. E.S. Hori, S. Skogestad and V. Alstad, "Perfect steady-state indirect control", *Ind.Eng.Chem.Res*, **44** (4), 863-867 (2005).
111. S. Skouras, S. Skogestad and V. Kiva, "Analysis and control of heteroazeotropic batch distillation", *AIChE Journal*, **51** (4), 1144-1157 (2005).
112. S. Skouras, V. Kiva and S. Skogestad, "Feasible separations and entrainer selection rules for heteroazeotropic batch distillation", *Chem. Eng. Sci.*, **60** (11), 2895-2909 (2005).
113. M.S. Govatsmark and S. Skogestad, "Selection of controlled variables and robust setpoints", *Ind.Eng.Chem.Res*, **44** (7), 2207-2217 (2005).
114. H.K. Engelen and S. Skogestad, "Multi-effect distillation applied to an industrial case study", *Chemical Engineering and Processing*, **44** (8), 819-826 (2005).
115. H.K. Engelen and S. Skogestad, "Minimum energy diagrams for multi-effect distillation arrangements", *AIChE Journal*, **51** (6), 1714-1725 (2005).
116. A. Faanes and S. Skogestad, "Offset-free tracking of model predictive control with model mismatch: Experimental results", *Ind.Eng.Chem.Res*, **44** (11), 3966-3972 (2005).
117. V. Kariwala, S. Skogestad, J.F. Forbes and E.S. Meadows, "Achievable input performance of linear systems under feedback control", *Int. J. Control*, **78** (16), 1327-1341 (2005).
118. V. Kariwala, S. Skogestad and J.F. Forbes, "Relative Gain Array for norm-bounded uncertain systems", *Ind.Eng.Chem.Res*, **45** (5), 1751-1757 (2006).
119. S. Skogestad, "Tuning for smooth PID control with acceptable disturbance rejection", *Ind.Eng.Chem.Res*, **45** (23), 7817-7822 (2006).

120. F. Zenith, F. Seland, O.E. Kongstein, B. Brresen, R. Tunold and S. Skogestad, "Control-oriented modelling and experimental study of the transient response of a high-temperature polymer fuel cell", *Journal of Power Sources*, **162**, 215-227 (2006).
121. A.C.B. Araujo and S. Skogestad, "Limit Cycles with Imperfect Valves: Implications for Controllability of Processes with Large Gains", *Ind.Eng.Chem.Res.*, **45** (26), 9024-9032 (2006).
122. V. Alstad and S. Skogestad, "Null Space Method for Selecting Optimal Measurement Combinations as Controlled Variables", *Ind.Eng.Chem.Res.*, **46** (3), 846-853 (2007).
123. V. Kariwala and S. Skogestad, " $\mu$ -Interaction measure for unstable systems", *Int. J. Automation and Control*, **1** (4), 295-313 (2007).
124. V. Kariwala and S. Skogestad, "L1-Q Approach for efficient computation of disturbance rejection measures for feedback control", *J. Proc. Control*, **17** (6), 501-508 (2007).
125. S. Skogestad, "The dos and don'ts of distillation columns control", *Chemical Engineering Research and Design (Trans IChemE, Part A)*, **85** (A1), 13-23 (2007).
126. E.S. Hori and S. Skogestad, "Selection of control structure and temperature location for two-product distillation columns", *Chemical Engineering Research and Design (Trans IChemE, Part A)*, **85** (A3), 293-306 (2007).
127. J. B. Jensen and S. Skogestad, "Optimal operation of simple refrigeration cycles. Part I: Degrees of freedom and optimality of sub-cooling", *Computers and Chemical Engineering*, **31**, 712-721 (2007).
128. J. B. Jensen and S. Skogestad, "Optimal operation of simple refrigeration cycles. Part II: Selection of controlled variables", *Computers and Chemical Engineering*, **31**, 1590-1601 (2007).
129. F. Zenith and S. Skogestad, "Control of fuel cell power output", *J. Proc. Control*, **17** (4), 333-347 (2007).
130. E. Storkaas and S. Skogestad, "Controllability analysis of two-phase pipeline-riser systems at riser slugging conditions", *Control Engineering Practice*, **15**, 567-581 (2007).
131. A.C.B. Araujo, M. Govatsmark and S. Skogestad, "Application of plantwide control to the HDA process. I Steady-state and self-optimizing control", *Control Engineering Practice*, **15**, 1222-1237 (2007).
132. A.C.B. Araujo, E.S. Hori and S. Skogestad, "Application of plantwide control to the HDA process. Part II Regulatory control", *Ind.Eng.Chem.Res.*, **46** (15), 5159-5174 (2007).

133. V. Kariwala, S. Skogestad and J.F. Forbes, "Reply to "Further Theoretical results on Relative Gain Array for Norm-Bounded Uncertain systems"" *Ind.Eng.Chem.Res.*, **46** (24), 8290 (2007).
134. V. Lersbamrungsuk, T. Srinophakun, S. Narasimhan and S. Skogestad, "Control structure design for optimal operation of heat exchanger networks", *AIChE J.*, **54** (1), 150-162 (2008). DOI 10.1002/aic.11366
135. T. Lid and S. Skogestad, "Scaled steady state models for effective on-line applications", *Computers and Chemical Engineering*, **32**, 990-999 (2008). doi:10.1016/j.compchemeng.2007.04.003
136. T. Lid and S. Skogestad, "Data reconciliation and optimal operation of a catalytic naphtha reformer", *Journal of Process Control*, **18**, 320-331 (2008). (Reprinted in *Modeling, Identification and Control*, **29**, 117-129, 2008.)
137. E.M.B. Aske, S. Strand and S. Skogestad, "Coordinator MPC for maximizing plant throughput", *Computers and Chemical Engineering*, **32**, 195-204 (2008). (Also reprinted in: *Modeling Identification and Control*, **29** (3), 103-115, 2008.)
138. J.B. Jensen and S. Skogestad, "Problems with specifying Delta T-min in design of processes with heat exchangers", *Ind.Eng.Chem.Res.*, **47** (9), 5159-5174 (2008).
139. M. Baldea, A.C.B Araujo, P. Daoutidis and S. Skogestad, "Dynamic considerations in the synthesis of self-optimizing control structures", *AIChE J.*, **54** (7), 1830-1841 (2008).
140. A. Araujo and S. Skogestad, "Control structure design for the ammonia synthesis process", *Computers and Chemical Engineering*, **32** (12), 2920-2932 (2008).
141. E.S. Hori and S. Skogestad, "Selection of controlled variables: Maximum gain rule and combination of measurements", *Ind.Eng.Chem.Res.*, **47** (23), 9465-9471 (2008).
142. V. Alstad, S. Skogestad and E.S. Hori, "Optimal measurement combinations as controlled variables", *Journal of Process Control*, **19**, 138-148 (2009) (Available online March 2008; DOI 10.1016/j.jprocont.2008.01.002)
143. A. Linhart and S. Skogestad, "Computational performance of aggregated distillation models", *Computers and Chemical Engineering*, **31** (1), 296-308 (2009).
144. F. Zenith and S. Skogestad, "Control of the mass and energy dynamics of polybenzimidazole-membrane fuel cells", *J. Process Control*, **19** (3), 415-432 (2009).

145. S. Gruetzmann, G. Fieg and S. Skogestad, "Experimental and Theoretical Studies on the Start-Up Operation of a Multivessel Batch Distillation Column", *Ind.Eng.Chem.Res.*, **48** (11), 5336-5343 (2009).
146. J.B. Jensen and S. Skogestad, "Steady-State Operational Degrees of Freedom with Application to Refrigeration Cycles", *Ind.Eng.Chem.Res.*, **48** (14), 6652-6659 (2009).
147. E.M.B. Aske and S. Skogestad, "Consistent inventory control", *Ind.Eng.Chem.Res.*, **48** (44), 10892-10902 (2009).
148. S. Skogestad, "Feedback: Still the Simplest and Best Solution", *Modeling, Identification and Control*, **30** (3), 149-155 (2009). DOI: 10.4173/mic.2009.3.5
149. H. Sivertsen, V. Alstad and S. Skogestad, "Medium-scale experiments on stabilizing riser-slug flow", *Society of Petroleum Engineers (SPE) Journal on Projects, Facilities & Construction*, **4** (4), 156-170 (Dec. 2009).
150. L. Dobos, J. Jhke, J. Abonyi, S. Skogestad, "Dynamic model and control of heat exchanger networks for district heating", *Hungarian Journal of Industrial Chemistry Veszprem*, **37** (1), 37-49 (2009).
151. H. Sivertsen, E. Storkaas and S. Skogestad, "Small-scale experiments on stabilizing riser slug flow", *Chemical Engineering Research and Design (Trans IChemE, Part A)*, **88** (A3), 213-228 (2010).
152. H. Manum and S. Skogestad, "Bilevel programming for analysis of reduced models for use in model predictive control", *Journal of Cybernetics and Informatics*, **9**, 3-12 (2010).
153. M. Shamsuzzoha and S. Skogestad, "The setpoint overshoot method: A simple and fast method for closed-loop PID tuning", *Journal of Process Control*, **20**, 1220-1234 (2010).
154. A. Linhart and S. Skogestad, "Reduced distillation models via stage aggregation", *Chemical Engineering Science*, **65**, 3439-3456 (2010).
155. S. Alcantara, W.D. Zhang, C. Pedret, R. Vilanova, S. Skogestad, "IMC-like Analytical H-infinity design with S/SP mixed sensitivity consideration: Utility in PID tuning guidance", *Journal of Process Control*, **21** (4), 554-563 (2011). Corrected version reprinted in: **21** (6), 976-985 (2011).
156. J.J. Downs and S. Skogestad, "An industrial and academic perspective on plantwide control", *Annual Reviews in Control*, **35**, 99-110 (2011).
157. M. Ghadrddan, I.J. Halvorsen and S. Skogestad, "Optimal operation of Kaibel distillation columns", *Chemical Engineering Research and Design*, **89**, 1382-1391 (2011).



158. I. Dejanovic, Lj. Matijasevic, I.J. Halvorsen, S. Skogestad, H. Jansen, B. Kaibel and Z. Olujić, “Designing four-product dividing wall columns for separation of a multicomponent aromatics mixture”, *Chemical Engineering Research and Design*, **89**, 1155-1167 (2011).
159. M. Panahi and S. Skogestad, “Economically efficient operation of CO<sub>2</sub> capturing process, Part I: Self-optimizing procedure for selecting the best controlled variables”, *Chemical Engineering and Processing*, **50**, 247-253 (2011).
160. R. Jagtap, N. Kaistha and S. Skogestad, “Plantwide Control for Economic Operation of a Recycle Process with Side Reaction”, *Ind. Eng. Chem. Res.* **50** (14), 8571-8584 (2011).
161. S. Alcantara, C. Pedret, R. Vilanova, S. Skogestad, “Generalized internal model control for balancing input/output disturbance response”, *Ind.Eng.Chem.Res*, **50**, 11170-11180 (2011).
162. J. Jhke and S. Skogestad, “NCO tracking and self-optimizing control in the context of real-time optimization”, *Journal of Process Control*, **21** (10), 1407-1416 (2011).
163. Dones, I., Skogestad, S., Preisig, H.A., “Application of balanced truncation to nonlinear systems”, *Industrial and Engineering Chemistry Research*, **50** (17), 10093-10101 (2011).
164. Magnus G. Jacobsen and Sigurd Skogestad, “Active Constraint Regions for Optimal Operation of Chemical Processes”, *Industrial and Engineering Chemistry Research*, **50** (19), 11226-11236 (2011).
165. Halvorsen, I.J., Skogestad, S., “Energy efficient distillation”, *Journal of Natural Gas Science and Engineering*, **3** (4), 571-580 (2011).
166. Petlyuk, F., Danilov, R., Skouras, S., Skogestad, S., “Identification and analysis of possible splits for azeotropic mixtures-1. Method for column sections”, *Chemical Engineering Science*, **66** (12), 2512-2522 (2011)
167. Petlyuk, F., Danilov, R., Skouras, S., Skogestad, S., “Identification and analysis of possible splits for azeotropic mixtures. 2. Method for simple columns-1. Method for column sections”, *Chemical Engineering Science*, **69** (1), 159-169 (2012)
168. J. Jhke and S. Skogestad, “Optimal controlled variables for polynomial systems”, *Journal of Process Control*, **22** (1), 167-179 (2012).
169. A. Linhart and S. Skogestad, “An aggregation model reduction method for one-dimensional distributed systems”, *AIChE Journal*, **58** (5), 1524-1537 (2012) . DOI: 10.1002/aic.12688

170. M. Panahi, A. Rafiee, S. Skogestad and M. Hillestad, "A natural gas to liquid process model for optimal operation", *Industrial and Engineering Chemistry Research*, **51**, 425-433 (2012)
171. M. Panahi and S. Skogestad, "Economically efficient operation of CO2 capturing process, Part II: Control layer", *Chemical Engineering and Processing*, **52**, 112-124 (2012)
172. M. Panahi and S. Skogestad, "Selection of Controlled Variables for a Natural Gas to liquids (GTL) Process", *Industrial and Engineering Chemistry Research*, **51**, 10179-10190 (2012)
173. H. Manum and S. Skogestad, "Self-optimizing control with active set changes", *Journal of Process Control*, **22** 873-883 (2012).
174. R. Yelchuru and S. Skogestad, "Convex formulations for optimal selection of controlled variables and measurements using Mixed Integer Quadratic Programming", *Journal of Process Control*, **22** 995-1007 (2012).
175. Magnus G. Jacobsen and Sigurd Skogestad, "Active Constraint Regions for Optimal Operation of Distillation Columns", *Industrial and Engineering Chemistry Research*, **51** 2963-2973 (2012).
176. D. Dwivedi, JP Strandberg, IJ Halvorsen, HA Preisig and S Skogestad, "Active Vapor Split Control for Dividing-Wall Columns", *Industrial and Engineering Chemistry Research*, **51** 15176-15183 (2012).
177. D. Dwivedi, J Strandberg, IJ Halvorsen and S Skogestad, "Steady state and dynamic operation of four-product dividing-wall (Kaibel) columns: Experimental Verification *Industrial and Engineering Chemistry Research*, **51** (48), 15696-15709 (2012).
178. D. Dwivedi, IJ Halvorsen and S Skogestad, "Control structure selection for three-product Petlyuk (dividing-wall) column", *Chemical Engineering and Processing: Process Intensification*, **64**, 57-67 (2013).
179. D. Dwivedi, IJ Halvorsen and S Skogestad, "Control structure selection for four-product Petlyuk column", *Chemical Engineering and Processing: Process Intensification*, **67**, 49-59 (2013).
180. R. Yelchuru and S. Skogestad, "Quantitative methods for regulatory layer selection", *Journal of Process Control*, **23** 58-69 (2013).
181. Magnus G. Jacobsen, Sigurd Skogestad "Active constraint regions for a natural gas liquefaction process", *Journal of Natural Gas Science and Engineering*, **10**, 8-13 (2013).
182. V Gera, M Panahi, S Skogestad, N Kaistha "Economic Plantwide Control of the Cumene Process", *Industrial and Engineering Chemistry Research*, **52** (2), 830-846 (2013).

183. Rahul Jagtap, Nitin Kaistha, Sigurd Skogestad “Economic Plantwide Control Over a Wide Throughput Range: A Systematic Design Procedure”, *AIChE J.*, **59** (7), 2407-2426 (2013).
184. Maryam Ghadrhan, Ivar J. Halvorsen, Sigurd Skogestad “Manipulation of Vapour Split in Kaibel Distillation Arrangements”, *Chemical Engineering and Processing: Process Intensification*, **72**, 10-23 (2013).
185. I.J. Halvorsen, I. Dejanovic, S. Skogestad, Z. Olujić “Internal configurations for a multi-product dividing wall column”, *Chemical Engineering Research and Design*, **91** (10), 1954-1965 (2013).
186. Antonio CB de Araujo, Simone Gallani, Michela Mulas, Sigurd Skogestad “Sensitivity analysis of Optimal Operation of an Activated Sludge Process Model for Economic Controlled Variable Selection”, *Industrial & Engineering Chemistry Research*, **52** (29), 9908-9921 (2013)
187. Ghadrhan, Maryam; Grimholt, Chriss; Skogestad, Sigurd “A New Class of Model-Based Static Estimators”, *Industrial & Engineering Chemistry Research*, **52** (35), 12451-12462 (2013)
188. Julio Cesar Sampaio Dutra, Thiago de Sital, Sigurd Skogestad, Enrique Luis Lima, Josrlos Pinto “Control of Bulk Propylene Polymerizations Operated with Multiple Catalysts through Controller Reconfiguration”, *Macromolecular Reaction Engineering*, Article first published online : 14 OCT 2013, DOI: 10.1002/mren.201300139
189. Esmaeil Jahanshahi, Sigurd Skogestad Simplified Dynamic Models for Control of Riser Slugging in Offshore Oil Production *Oil and Gas facilities* (SPE journal), pp. 64-79, December 2014.
190. Chatrattanawet, Narissara; Skogestad, Sigurd; Arpornwichanop, Amornchai. Control structure design and controllability analysis for solid oxide fuel cell. *Chemical Engineering Transactions*; Volume 39. , pp. 1291-1296, 2014
191. Dejanovic, Igor; Halvorsen, Ivar Johan; Skogestad, Sigurd; Jansen, Helmut; Olujić, Zarko. Hydraulic design, technical challenges and comparison of alternative configurations of a four-product dividing wall column. *Chemical Engineering and Processing*; Volume 84. pp. 71-81, 2014
192. Jaschke, Johannes; Skogestad, Sigurd. A self-optimizing strategy for optimal operation of a preheating train for a crude oil unit. *Computer - Aided Chemical Engineering*; Volume 33, pp. 607-612, 2014
193. Jaschke, Johannes; Skogestad, Sigurd. Optimal operation of heat exchanger networks with stream split: Only temperature measurements are required. *Computers and Chemical Engineering* Volume 70, 35-49, 2014

194. Khanam, Ambari; Shamsuzzoha, Mohammad; Skogestad, Sigurd. Optimal operation and control of divided wall column. *Computer - Aided Chemical Engineering*; Volume 33, pp. 673-678, 2014
195. Kim, KKK; Skogestad, Sigurd; Morari, Manfred; Braatz, Richard D. Necessary and sufficient conditions for robust reliable control in the presence of model uncertainties and system component failures. *Computers and Chemical Engineering*, Volume 70, 67-77, 2014
196. Nabil, M; Narasimhan, Sridharakumar; Skogestad, Sigurd. Profitable and dynamically feasible operating point selection for constrained processes. *Journal of Process Control*; Volume 24(5), 531-541, 2014
197. Dejanovic, Igor; Halvorsen, Ivar Johan; Skogestad, Sigurd; Jansen, Helmut; Oluji, Arko. Hydraulic design, technical challenges and comparison of alternative configurations of a four-product dividing wall column. *Chemical Engineering and Processing 2014* ;Volum 84. s. 71-81

## Book Chapters

1. S. Skogestad, "Modelling and Control of Distillation Columns as a  $5 \times 5$  System", *DECHEMA Monographs*, **116**, R. Eckermann (Ed.), 403-411 (1989) (From 20th Europ. Symp. on Computer Applications in the Chemical Industry (CACHI 89), Erlangen, Germany, April 1989).
2. S. Skogestad. "Robust Control", *Practical Distillation Control*, W.L. Luyben (Editor), Van Nostrand Reinhold, 1992, 291-309.
3. I. Postlethwaite and S. Skogestad, "Robust multivariable control using  $H_\infty$  methods – Analysis, design and Industrial Applications", *Essays on Control: Perspectives in the Theory and its Applications*, H.L. Trentleman and J.C. Willems (Eds.), Birkhauser, 1993 (Lecture notes for invited short course at the 1993 European Control Conference), 269-337.
4. E.W. Jacobsen and S. Skogestad, "Identification of Ill-Conditioned Plants - A Benchmark Problem", *The Modeling of Uncertainty in Control Systems; Proceedings of the 1992 Santa Barbara Workshop*, R. S. Smith and M. Dahleh (Eds.), Springer-Verlag, London, 1994, 367-376.
5. S. Skogestad, "Frequency-domain methods for analysis and design. I. H-infinity methods and robust control". *Methods of Model Based Process Control - Proc. of NATO-ASI in Antalya, Turkey, Aug. 1994*, R. Berber (Ed.), Kluwer Academic Publishers, Netherlands, 1995, 113-152.
6. S. Skogestad, "Frequency-domain methods for analysis and design. II. Controllability analysis of SISO Systems", *Methods of Model Based Process Control - Proc. of NATO-ASI in Antalya, Turkey, Aug. 1994*, R. Berber (Ed.), Kluwer Academic Publishers, Netherlands, 1995, 153-191.

7. M. Hovd and S. Skogestad, "Techniques in the Control of Interconnected Plants", *Mechatronic Systems Techniques and Applications. Volume 5: Diagnostic, Reliability and Control System Techniques*, C.T. Leondes (Ed.), Gordon and Breach Science Publishers, 2000, 139-200.
8. I.J. Halvorsen and S. Skogestad, "Theory of Distillation", In: *Encyclopedia of Separation Science*. Ian D. Wilson (Editor-in-chief), Academic Press, 2000, pp. 1117-1134.
9. S. Skogestad, "Integration of optimal operation and control", In: *The integration of design and control*. P. Seferelis and M.C. Georgiadis (Editors), Elsevier, 2004, pp. 485-500.
10. Ivar J. Halvorsen, Sigurd Skogestad "Minimum Energy Operation of Petlyuk Distillation Columns - Nonsharp Product Specifications", Proceedings of the 1st Annual Gas Processing Symposium, 2009, Pages 79-87, Elsevier, ISBN-13: 978-0-444-53292-3.
11. Jrgen Bauck Jensen, Sigurd Skogestad "Single-cycle mixed-fluid LNG process Part I: Optimal design", Proceedings of the 1st Annual Gas Processing Symposium, H. Alfadala, G.V. Rex Reklaitis and M.M. El-Halwagi (Editors). 2009, Pages 211-218, Elsevier. ISBN-13: 978-0-444-53292-3.
12. Jrgen Bauck Jensen, Sigurd Skogestad "Single-cycle mixed-fluid LNG process Part II: Optimal operation", Proceedings of the 1st Annual Gas Processing Symposium, H. Alfadala, G.V. Rex Reklaitis and M.M. El-Halwagi (Editors). 2009, Pages 219-226, Elsevier. ISBN-13: 978-0-444-53292-3.
13. Mehdi Panahi, Mehdi Karimi, Sigurd Skogestad, Magne Hillestad, Hallvard F. Svendsen "Self-Optimizing and Control Structure Design for a CO2 Capturing Plant", Advances in Gas Processing (Volume 2). Proceedings of the 2nd Annual Gas Processing Symposium, F. T. Eljack, G.V. Rex Reklaitis and M.M. El-Hawagi (Editors). 2010, Pages 331-338, Elsevier ISBN-978-0-444-53588-7
14. Mehdi Panahi, Sigurd Skogestad, Ramprasad Yelchuru "Steady State Simulation for Optimal Design and Operation of a GTL Process", Advances in Gas Processing (Volume 2). Proceedings of the 2nd Annual Gas Processing Symposium, F. T. Eljack, G.V. Rex Reklaitis and M.M. El-Hawagi (Editors). 2010, Pages 275-284, Elsevier, ISBN-978-0-444-53588-7
15. Johannes Jhke and Sigurd Skogestad, "Measurement Polynomials as Controlled Variables", In: *Selected topics on constrained and nonlinear control*, Editors: M. Huba, S. Skogestad, M. Fikar, M. Hovd, T.A. Johansen and B.Rohal-Ilkiv. Published by STU Bratislava and NTNU Trondheim, Jan. 2011. ISBN-978-80-968627-4-0, pp. 1-26.

16. Johannes Jhke and Sigurd Skogestad, "Measurement Polynomials as Controlled Variables - Exercises", In: *Selected topics on constrained and nonlinear control. Workbook*, Editors: M. Huba, S. Skogestad, M. Fikar, M. Hovd, T.A. Johansen and B.Rohal-Ilkiv. Published by STU Bratislava and NTNU Trondheim, Jan. 2011. ISBN-978-80-968627-3-3, pp. 91-96.
17. Sigurd Skogestad, Ramprasad Yelchuru and Johannes Jhke "Optimal use of measurements for control, optimization and estimation using the Loss method: Summary of existing results and some new", In: *Selected topics on constrained and nonlinear control. Workbook*, Editors: M. Huba, S. Skogestad, M. Fikar, M. Hovd, T.A. Johansen and B.Rohal-Ilkiv. Published by STU Bratislava and NTNU Trondheim, Jan. 2011. ISBN-978-80-968627-3-3, pp. 53-86.
18. Sigurd Skogestad and Chriss Grimholt "The SIMC Method for Smooth PID Controller Tuning", Chapter 5 in: R. Vilanova, A. Visioli (eds.), *PID Control in the Third Millennium*, Advances in Industrial Control, DOI 10.1007/978-1-4471-2425-2-5, Springer-Verlag, London, 2012.
19. Sigurd Skogestad "Economic Plantwide Control", Chapter 11 in: *Plantwide control. recent Developments and Applications*, G.P. Rangaiah and V. kariwala (Editors). Wiley, Chichester, 2012. ISBN 978-0-470-98014-9. pp. 229-251.
20. Sigurd Skogestad "Plantwide Control", Chapter 5.3.1 in: *Process Systems Engineering, 5. Process Dynamics, Control, Monitoring, and Identification* by K.V. Gernaey, J. Glassey, S Skogestad, S. Kramer, A. Weiss, S. Engell, E.N. Pistikopoulos, and D.B. Cameron. Part of *Ullmann's Encyclopedia of Industrial Chemistry*. Online ISBN: 9783527306732. c Wiley, Weinheim, 2012. pp. 10-14.
21. Sigurd Skogestad "Control structure selection", In: *Encyclopedia of Systems and Control*, Baillieul, John, Samad, Tariq (Eds.), Springer, 2015. ISBN 978-1-4471-5057-2

## Editor special issues

1. Sigurd Skogestad, and Kristian M. Lien (Editors), Preface, Joint 6th International Symposium on Process Systems Engineering and 30th European Symposium on Computer Aided Process Engineering - PSE '97 ESCAPE-7 - 25-29 May 1997, Trondheim, Norway. *Computers and Chemical Engineering*, Volume: 21 (Supplement S), pp. R17-R18, 1997
2. Sigurd Skogestad, Prashant Mhaskar (Editors), Introduction to the Special Issue on Energy Efficient Buildings (Editorial) *Journal of Process Control*, Volume 24 (6), June 2014, Pages 701-702.

## Trade journals

1. Sigurd Skogestad “Herding cats”, *Control* (Chicago, Illinois), **24** (10), 47-53, October 2011.
2. Even Fladberg, “Profilen Sigurd Skogestad. Kongen av kyberteknikk”, *Automatisering - Teknisk ukeblad*, 01-2014, 41-42. 2014. (In Norwegian)

## Editor of book and journal volumes

1. “Proceedings of symposium PSE’97/ESCAPE-7, Trondheim, May 1997”, Supplement to *Computers & Chemical Engineering*, 21, 1997. Editor S. Skogestad.
2. “Selected and extended papers from the symposium on PSE’97/ESCAPE’7”, *Computers & Chemical Engineering*, **23**, Nos. 4-5, 1999. Guest Editor S. Skogestad. See: “Editorial”, *Computers and Chem. Engng.*, **23**, 449 (1999).
3. “Selected papers from symposium PSE-ESCAPE’97, Trondheim, May 1997”, *Journal of Process Control*, **9**, Nos. 5, 1999. Guest Editor S. Skogestad.
4. “Selected topics on constrained and nonlinear control”, Editors: M. Huba, S. Skogestad, M. Fikar, M. Hovd, T.A. Johansen and B.Rohal-Ilkiv. Published by STU Bratislava and NTNU Trondheim, Jan. 2011. ISBN-978-80-968627-4-0
5. “Selected topics on constrained and nonlinear control. Workbook”, Editors: M. Huba, S. Skogestad, M. Fikar, M. Hovd, T.A. Johansen and B.Rohal-Ilkiv. Published by STU Bratislava and NTNU Trondheim, Jan. 2011. ISBN-978-80-968627-3-3
6. “Preprints of the NIL Workshop: Selected topics on constrained and nonlinear control”, Editors: M. Huba, S. Skogestad, M. Fikar, M. Hovd, T.A. Johansen and B.Rohal-Ilkiv. Published by STU Bratislava and NTNU Trondheim, Jan. 2011. ISBN-80-968627-2-6

## International Conference Papers

1. M. Morari, S. Skogestad and D.E. Rivera, “Implications of Internal Model Control for PID Controllers”, *Proc. American Control Conference (ACC)*, San Diego, California, June 1984.
2. S. Skogestad and M. Morari, “Model Uncertainty, Process Design and Process Control”, Paper 1a, AIChE Annual Meeting, Chicago, Nov. 1985.
3. S. Skogestad and M. Morari, “Control of Ill-Conditioned Plants: HighPurity Distillation”, paper 74a, AIChE Annual Meeting, Miami Beach, Nov. 1986.

4. S. Skogestad and M. Morari, "Implication of Large RGA-Elements on Control Performance", paper 6d, AIChE Annual Meeting, Miami Beach, Nov. 1986.
5. S. Skogestad and M. Morari, "Robust Performance of Decentralized Control Systems by Independent Designs", *Proc. American Control Conference (ACC)*, 1785-1790, Minneapolis, June 1987.
6. S. Skogestad and M. Morari, "Control of High-Purity Distillation Columns from a Robustness Viewpoint", *Proc. American Control Conference (ACC)*, 1325-1330, Minneapolis, June 1987.
7. S. Skogestad and M. Morari, "Robust Control of Distillation Columns", *Preprints 10th IFAC Conference*, Vol. 2, 281-286, München, July 1987.
8. S. Skogestad and M. Morari, "LV-control of a High-Purity Distillation Column", *Preprints 10th IFAC Conference*, Vol. 8, 416-425, München, July 1987.
9. S. Skogestad, "Analysis and Control of Distillation Columns", Invited lecture CHISA '87, Praha, Sept 1987.
10. S. Skogestad, "Disturbance Rejection in Distillation Columns", *Proceedings CHEM DATA 88*, 365-371, 19th European Conf. On The Use of Computers in Chem. Eng., Göteborg, Sweden, June 1988.
11. S. Skogestad and M. Morari, "Variable Selection for Decentralized Control", Paper 128c, AIChE Annual Meeting, Washington DC, Nov. 1988 (Reprinted in 1992 in *MIC*, see paper 33 in list of journal publications).
12. S. Skogestad and P. Lundström, "Mu-optimal PID settings for Distillation Columns", Paper 126f, AIChE Annual Meeting, Washington DC, Nov. 1988.
13. T. Mejdell and S. Skogestad, "Estimate of process outputs from multiple secondary measurements", *Proc. American Control Conference (ACC)*, 2112-2121, Pittsburgh, June 1989.
14. S. Skogestad, E. W. Jacobsen and P. Lundström, "Selecting the best distillation control structure", *Preprints IFAC Symposium DYCORD'89*, 295-302, Maastricht, NL., Aug. 1989.
15. S. Skogestad, "The Gibbs-Duhem Equation of Process Design and Control", Paper 142e, AIChE Annual Meeting, San Francisco, Nov. 1989.
16. S. Skogestad, E. W. Jacobsen and M. Morari, "DB-control of distillation columns", Paper 167Bx, AIChE Annual Meeting, San Francisco, Nov. 1989.



17. S. Skogestad, P. Lundström and M. Hovd, "Control of identical parallel processes", Paper 167Ba, *AIChE Annual Meeting*, San Francisco, Nov. 1989.
18. S. Skogestad, "Issues in dynamic modelling using distillation as an example", Lecture notes at seminar on Modeling and Optimization of Chemical Processes, NTH, 26-28 August 1991. Updated version of paper presented at *Kursdagene 1990*, NTNU, Trondheim, Jan. 1990.
19. S. Skogestad and M. Hovd, "Use of Frequency-Dependent RGA for Control Structure Selection", *Proc. American Control Conference (ACC)*, 2133-2139, San Diego, May 1990.
20. E.W. Jacobsen and S. Skogestad, "Dynamics and Control of Unstable Distillation Columns", Presented at *40th Canadian Chemical Engineering Conference*, Halifax, July 15-21, 1990.
21. S. Skogestad, E. W. Jacobsen and P. Lundström, "Modelling requirements for robust control of distillation columns", *Proceedings 11th IFAC Conference*, Tallin, Estonia, Aug. 1990. Published by Pergamon Press, Oxford, UK, Vol.6, 191-197.
22. T. Mejdell and S. Skogestad, "Composition Control of Distillation Columns Using Multiple Temperature Measurements", Paper 23g, *AIChE Annual Meeting*, Chicago, Nov. 1990.
23. E.W. Jacobsen and S. Skogestad, "Multiple Steady-States in Ideal TwoProduct Distillation", Paper 133a, *AIChE Annual Meeting*, Chicago, Nov. 1990.
24. E.W. Jacobsen, L. Laroche, M. Morari, H.W. Andersen and S. Skogestad, "Robust Control of Homogeneous Azeotropic Distillation", Paper 211d, *AIChE Annual Meeting*, Chicago, Nov. 1990.
25. M. Hovd, P. Lundström and S. Skogestad, "Controllability Analysis Using Frequency-dependent Measures for Interactions and Disturbances", Paper 312j, *AIChE Annual Meeting*, Chicago, Nov. 1990.
26. P. Lundström, S. Skogestad and Z-Q. Wang, "Weight Selection for H-infinity and mu-control methods – Insights and examples from process control", *Symposium on "Robust Control System Design Using H-infinity and Related Methods"*, Cambridge, UK, March 1991. Published in: P.H. Hammond (Ed.), *Institute of Measurement and Control*, London, 1991, 139-157.
27. E. W. Jacobsen, P. Lundström and S. Skogestad, "Modelling and Identification for Robust Control of Ill-conditioned Plants – a Distillation Case Study", *Proc. American Control Conference (ACC)*, 242-248, Boston, June 1991.

28. E. W. Jacobsen and S. Skogestad, "Control of Unstable Distillation Columns", *Proc. American Control Conference (ACC)*, 773-778, Boston, June 1991.
29. P. Lundström, S. Skogestad, M. Hovd and Z-Q. Wang, "Non-uniqueness of Robust  $H_\infty$  decentralized PI-control", *Proc. American Control Conference (ACC)*, 1830-1835, Boston, June 1991.
30. P. Lundström, J.H. Lee, M. Morari and S. Skogestad, "Limitations of Dynamic Matrix Control", *Proc. European Control Conference*, 1839-1844, Grenoble, July 1991.
31. S. Skogestad, M. Hovd and P. Lundström, "Towards integrating design and control: Use of frequency-dependent tools for controllability analysis", *Proc. Process Systems Engineering (PSE) 91*, III.3.1-III.3.15, Canada, Aug. 1991.
32. M. Hovd and S. Skogestad, "Impact of model uncertainty on control structure selection for the fluid catalytic cracker process", *Preprints IFAC Symposium ADCHEM'91*, 107-112, Toulouse, France, Oct. 91.
33. T. Mejdell and S. Skogestad, "Estimators for ill-conditioned plants: High-purity distillation", *Preprints IFAC Symposium ADCHEM'91*, 403-408, Toulouse, France, Oct. 91.
34. E. Wolff, K.W. Mathisen and S. Skogestad, "Dynamics and controllability of heat exchanger networks", *EFChE Symposium COPE-91*, Barcelona, Spain, Oct. 91. Published in: Puigjaner and Espuna (Eds.), *Computer-Oriented Process Engineering*, Elsevier, 1991, 117-122.
35. E.W. Jacobsen and S. Skogestad, "Design modifications for improved control of distillation columns", *EFChE Symposium COPE-91*, Barcelona, Spain, Oct. 91. Published in: Puigjaner and Espuna (Eds.), *Computer-Oriented Process Engineering*, Elsevier, 1991, 123-128.
36. E.W. Jacobsen and S. Skogestad, "Effect of Multiplicity on Distillation Column Operation", Paper 60e, *AIChE Annual Meeting*, Los Angeles, Nov. 1991.
37. E.W. Jacobsen and S. Skogestad, "Design bmodifications for improved operability of distillation columns", Paper 132g, *AIChE Annual Meeting*, Los Angeles, Nov. 1991.
38. E. Sørensen and S. Skogestad, "Controllability Analysis of a Combined Batch Reactor / Batch Distillation Column", Paper 140e, *AIChE Annual Meeting*, Los Angeles, Nov. 1991.
39. M. Hovd and S. Skogestad, "Controllability Analysis of the Fluid Catalytic Cracking Process", Paper 145g, *AIChE Annual Meeting*, Los Angeles, Nov. 1991.

40. T. Mejdell and S. Skogestad, "Estimation of Distillation Compositions from Multiple Temperature Measurements using PLS Regression", Paper 148d, *AIChE Annual Meeting*, Los Angeles, Nov. 1991.
41. K.W. Mathisen, S. Skogestad, and E.A. Wolff, "Controllability of heat exchanger networks", Paper 152n, *AIChE Annual Meeting*, Los Angeles, Nov. 1991.
42. P. Lundström and S. Skogestad, "Robust and Model Predictive Control of  $5 \times 5$  Distillation Columns", Paper 154f, *AIChE Annual Meeting*, Los Angeles, Nov. 1991.
43. E.W. Jacobsen and S. Skogestad, "Bifurcations in Ideal Two Product Distillation", Paper 158f, *AIChE Annual Meeting*, Los Angeles, Nov. 1991.
44. P. Lundström, S. Skogestad and Z.Q. Wang, "Uncertainty Weight Selection for H-infinity and Mu-Control Methods", Proc. IEEE Conf. on Decision and Control (CDC), 1537-1542, Brighton, UK, Dec. 1991.
45. Z.Q. Wang and S. Skogestad, " $\mu$ -Analysis and Synthesis of Time Delay Systems using Smith Predictor", Proc. IEEE Conf. on Decision and Control (CDC), 3033-3034, Brighton, UK, Dec. 1991.
46. E.W. Jacobsen and S. Skogestad, "Dynamics and Control of Unstable Distillation Columns", Preprints *IFAC-symposium DYCORN+ '92*, 345-350, Maryland, Apr. 27-29, 1992.
47. S. Skogestad, "Dynamics and Control of Distillation Columns - A Critical Survey", (Invited plenary lecture). Preprints *IFAC-symposium DYCORN+ '92*, 1-25, Maryland, Apr. 27-29, 1992 (Reprinted in 1997 in *MIC*; see paper 66 in the list of journal publications).
48. E. A. Wolff, S. Skogestad and M. Hovd, "Controllability of integrated plants", *1992 AIChE Spring National Meeting*, New Orleans, Mar./Apr. 1992, Paper 67a.
49. K.W. Mathisen, S. Skogestad and T. Gundersen, "Optimal bypass placement in heat exchanger networks", *1992 AIChE Spring National Meeting*, New Orleans, Mar./Apr. 1992, Paper 67e.
50. S. Skogestad, "An Essay on the modeling of uncertainty in control systems", *NSF/AFOSR Workshop on The Modeling of Uncertainty in Control Systems*, UC Santa Barbara, 18-20 June 1992.
51. M. Hovd and S. Skogestad, "Robust control of systems consisting of symmetrically interconnected subsystems", *Proc. American Control Conference (ACC)*, Chicago, June 1992, 3021-3025.

52. Z.-Q. Wang and S. Skogestad, "Robust controller design for uncertain time delay systems", *10th International Conference on Analysis and Optimization of Systems; State and Frequency Domain Approaches for Infinite Dimensional Systems*, Sophia-Antipolis, June 1992, 610-623.
53. E. Sørensen and S. Skogestad, "Control strategies for a combined batch reactor/batch distillation process", *NATO Workshop on batch processes*, Turkey, June 1992.
54. S. Skogestad and E.A. Wolff, "Controllability measures for disturbance rejection", *Preprints IFAC workshop on Interactions between process design and process control, London, Sept. 1992*, Edited by J.D. Perkins, Pergamon Press, 1992, 23-29 (Reprinted in 1996 in *MIC*, see paper 60 in list of journal publications).
55. E.A. Wolff, S. Skogestad, M. Hovd and K.W. Mathisen, "A procedure for controllability analysis", *Preprints IFAC workshop on Interactions between process design and process control, London, Sept. 1992*, Edited by J.D. Perkins, Pergamon Press, 1992, 127-132.
56. M. Hovd and S. Skogestad, "Controllability analysis of unstable processes", *Preprints IFAC workshop on Interactions between process design and process control, London, Sept. 1992*, Edited by J.D. Perkins, Pergamon Press, 1992, 49-54.
57. R.D. Braatz, M. Morari and S. Skogestad, "Advances in robust loopshaping", Paper 127a, *AIChE Annual Meeting*, Miami Beach, Nov. 1992.
58. P. Lundström and S. Skogestad, "Robust model predictive control of distillation columns", Paper 124e, *AIChE Annual Meeting*, Miami Beach, Nov. 1992.
59. E. W. Jacobsen and S. Skogestad, "Inconsistencies in dynamic models for ill-conditioned plants", Paper 125e, *AIChE Annual Meeting*, Miami Beach, Nov. 1992.
60. M. Hovd and S. Skogestad, "Design of robust decentralized controllers", Paper 127d, *AIChE Annual Meeting*, Miami Beach, Nov. 1992.
61. Z.-Q. Wang, S. Skogestad and Y. Zhao, "A comparison of various control structures for continuous bioreactors", Paper 129g, *AIChE Annual Meeting*, Miami Beach, Nov. 1992.
62. K.W. Mathisen and S. Skogestad, "Design, operation and control of resilient heat exchanger networks", Paper 141g, *AIChE Annual Meeting*, Miami Beach, Nov. 1992.
63. M. Hovd and S. Skogestad, "Robust sequential design of decentralized controllers", *Proc. 1993 European Control Conference*, Groningen, NL, June 1993, 1050-1055.

64. E.W. Jacobsen and S. Skogestad, "Identification of dynamic models for ill-conditioned plants - A benchmark problem", Proc. *1993 European Control Conference*, Groningen, NL, June 1993, 242-247.
65. P. Lundström, S. Skogestad and J.C. Doyle, "Two degree of freedom controller design for an ill-conditioned plant using  $\mu$ -synthesis", Proc. *1993 European Control Conference*, Groningen, NL, June 1993, 969-974.
66. E.A. Wolff and S. Skogestad, "Control configuration selection for distillation columns under temperature control", Proc. *1993 European Control Conference*, Groningen, NL, June 1993, 637-642.
67. M. Hovd and S. Skogestad, "Improved independent design of robust decentralized controllers", Proc. *12th IFAC World Congress*, Sydney, Australia, July 18-23, 1993, **Vol. 5**, 271-274.
68. M. Hovd, R.D. Braatz and S. Skogestad, "On the structure of the robust optimal controller for a class of problems", Proc. *12th IFAC World Congress*, Sydney, Australia, July 18-23, 1993, **Vol. 4**, 27-30.
69. P. Lundström, Z.-Q. Wang and S. Skogestad, "Modelling of gain and delay uncertainty in the structured singular value framework", Proc. *12th IFAC World Congress*, Sydney, Australia, July 18-23, 1993, **Vol. 1**, 441-444.
70. S. Skogestad, "Interactions between process design and control", Invited plenary lecture, CHISA'93, Praha, Aug.-Sept., 1993.
71. Z.-Q. Wang, S. Skogestad and Y. Zhao, "Exact linearization control of continuous bioreactors: A comparison of different control structures", Proc. *2nd IEEE Conf. on Control Applications*, Vancouver, Canada, Sept. 13-16, 1993, 107-112.
72. J. Morud and S. Skogestad, "The dynamics of chemical reactors with heat integration", Paper 26e, *AIChE Annual Meeting*, St. Louis, Nov. 1993.
73. M. Hovd and S. Skogestad, "Robust control of symmetric processes", Paper 146k, *AIChE Annual Meeting*, St. Louis, Nov. 1993.
74. M. Hovd and S. Skogestad, "Pairing criteria for unstable plants", Paper 149i, *AIChE Annual Meeting*, St. Louis, Nov. 1993.
75. E.A. Wolff, S. Skogestad and K. Havre, "Dynamics and control of integrated three-product (Petlyuk) distillation columns", Paper 195a, *AIChE Annual Meeting*, St. Louis, Nov. 1993.
76. P. Lundström, P. Flatby and S. Skogestad, "Effect of flow dynamics, energy balance and pressure dynamics on the overall response of distillation columns", Paper 196c, *AIChE Annual Meeting*, St. Louis, Nov. 1993.

77. E.A. Wolff, S. Skogestad and K. Havre, "Dynamics and control of integrated three-product (Petlyuk) distillation columns", *Symposium ESCAPE'4*, Dublin, March 1994, Published in *IChemE Symp. Ser. No. 107*, 111-118.
78. E.A. Wolff, J.D. Perkins, S. Skogestad, "A procedure for operability analysis", *Symposium ESCAPE'4*, Dublin, March 1994, Published in *IChemE Symp. Ser. No. 107*, 95-102.
79. P. Flatby, P. Lundström and S. Skogestad, "Rigorous dynamic simulation of distillation columns based on UV-flash", *Preprints IFAC Symposium ADCHEM'94*, Kyoto, Japan, May 1994, 276-282.
80. Y. Zhao and S. Skogestad, "A comparison of various control schemes for continuous bioreactor", *Preprints IFAC Symposium ADCHEM'94*, Kyoto, Japan, May 1994, 325-330.
81. S. Skogestad, "Controllability analysis of SISO systems", *Preprints IFAC Symposium ADCHEM'94*, Kyoto, Japan, May 1994, 471-476.
82. P. Lundström and S. Skogestad, "Opportunities and difficulties with 5x5 distillation control", *Preprints IFAC Symposium ADCHEM'94*, Kyoto, Japan, May 1994, 378-384.
83. E. Sørensen and S. Skogestad, "Optimal operating policies of batch distillation", *Proc. Symposium PSE'94*, Kyongju, Korea, June 1994, 449-456.
84. K.W. Mathisen, M. Morari and S. Skogestad, "Optimal operation of heat exchanger networks", *Proc. Symposium PSE'94*, Kyongju, Korea, June 1994, 315-322.
85. E.A. Wolff and S. Skogestad, "Operability of integrated plants", *Proc. Symposium PSE'94*, Kyongju, Korea, June 1994, 63-70.
86. J.C. Morud and S. Skogestad, "The dynamic behavior of integrated plants", *Symposium PSE'94*, Kyongju, Korea, June 1994, 913-918.
87. S. Skogestad, "A procedure for SISO controllability analysis - with application to design of pH-processes", *Preprints IFAC Workshop on Interactions between process design and process control*, Baltimore, June 1994, 23-28.
88. M. Hovd, R.D. Braatz and S. Skogestad, "SVD Controllers for  $H_2$ -,  $H_\infty$ -, and  $\mu$ -optimal control", *Proceedings 1994 American Control Conference (ACC)*, Baltimore, June-July 1994, 1233-1237.
89. R.D. Braatz, M. Morari and S. Skogestad, "Robust Reliable Decentralized Control", *Proceedings 1994 American Control Conference (ACC)*, Baltimore, June-July 1994, 3384-3388.
90. S. Skogestad, "Input-Output Controllability Analysis", Invited Lecture, Reglermöte, Västerås, Sweden, 25-26. Oct. 1994.

91. J. Morud, J. and S. Skogestad, "Allowable operating regions of integrated distillation arrangements", Paper 131d, *AICHE Annual Meeting*, San Francisco, Nov. 13-18, 1994.
92. S. Skogestad, "Design modifications for improved controllability - with application to design of buffer tanks", Paper 222e, *AICHE Annual Meeting*, San Francisco, Nov. 13-18, 1994.
93. Y. Zhao and S. Skogestad, "Modeling and control of a biochemical loop reactor with cellmass recycle", Paper 39d, *AICHE Annual Meeting*, San Francisco, Nov. 13-18, 1994.
94. Y. Zhao and S. Skogestad, "Modeling and control of a continuous bioreactor with cross-flow filtration", Proc. *6th Intl Conf on Comp Appl in Biotechnology*, Garmish-Partenkirchen, Germany, May 1995, Publ. by DECHEMA, A. Munack and K. Schugerl (Eds.), 344-348.
95. E. Sørensen and S. Skogestad, "Comparison of inverted and regular batch distillation", Preprint *IFAC Symposium DYCORN+95*, 4th IFAC Symposium on Dynamics and Control of Chemical Reactors, Distillation Columns and Batch Processes, Helsingør, Denmark, 7-9 June 1995, 141-146.
96. B. Wittgens and S. Skogestad, "Evaluation of dynamic models of distillation columns with emphasis on the initial response", Preprint *IFAC Symposium DYCORN+95*, 4th IFAC Symposium on Dynamics and Control of Chemical Reactors, Distillation Columns and Batch Processes, Helsingør, Denmark, 7-9 June 1995, 261-267.
97. J.C. Morud and S. Skogestad, "The dynamics of chemical reactors with heat integration", Proc. *1995 European Control Conference*, Rome, Italy, Sept. 1995, 2333-2338.
98. S. Skogestad, B. Wittgens, E. Sørensen, E. and R.J. Litto, "Multivessel batch distillation", *AICHE Annual Meeting*, Miami Beach, Nov. 1995, Paper 184i.
99. A.C. Christiansen, E.W. Jacobsen, J.D. Perkins and S. Skogestad, "On the dynamics of batch distillation: A study of parametric sensitivity in ideal binary columns", *AICHE Annual Meeting*, Miami Beach, Nov. 1995, Paper 184d.
100. J.C. Morud and S. Skogestad, "The dynamic behavior of cascade processes with application to distillation columns", *AICHE Annual Meeting*, Miami Beach, Nov. 1995, Paper 189b.
101. A.C. Christiansen, J.C. Morud and S. Skogestad, "A comparative analysis of methods for solving systems of nonlinear algebraic equations," *Proc. of the 38th SIMS Simulation Conference*, Trondheim, June 1996, 217-230.

102. K. Havre and S. Skogestad, "Input/output selection and partial control," *IFAC World Congress*, San Francisco, July 1996, Volume M, 181-186.
103. K. Havre, J. Morud and S. Skogestad, "Selection of feedback variables for implementing optimizing control schemes," *UKACC Conference Control'96*, Exeter, UK, Sept. 1996, 491-496.
104. K. Havre and S. Skogestad, "Effect of RHP zeros and poles on performance in multivariable systems," *UKACC Conference Control'96*, Exeter, UK, Sept. 1996, 930-935.
105. K. Havre and S. Skogestad, "Selection of variables for regulatory control using pole directions," *AIChE Annual Meeting*, Chicago, Nov. 1996, Paper 45f.
106. S. Skogestad, "Control structure design" *AIChE Annual Meeting*, Chicago, Nov. 1996, Paper 149a.
107. K. Havre and S. Skogestad "Limitations imposed by RHP zeros/poles in multivariable systems", *Proc. 1997 European Control Conference*, Brussels, Belgium, July 1997, Paper Tu-A H1 (6-page paper plus 1-page abstract).
108. B. Wittgens and S. Skogestad "Multivessel batch distillation - experimental verification", *Proc. symposium Distillation and Absorption 97* (R. Darton, Ed.), 239-248, Maastricht, Netherlands, 8-10 Sept. 1997. Published by IChemE, UK.
109. A.C. Christiansen, S. Skogestad and K.M. Lien, "Partitioned Petlyuk arrangements for quaternary separations", *Proc. symposium Distillation and Absorption 97* (R. Darton, Ed.), 745-756, Maastricht, Netherlands, 8-10 Sept. 1997. Published by IChemE, UK.
110. A.C. Christiansen and S. Skogestad, "Energy savings in integrated Petlyuk distillation arrangements: Importance of using the preferred separation" *AIChE Annual Meeting*, 16-21 Nov. 1997, Los Angeles, Paper 199d.
111. Ivar J. Halvorsen and Sigurd Skogestad, "Indirect on-line optimization through stepoint control", *AIChE Annual Meeting*, 16-21 Nov. 1997, Los Angeles, Paper 194h.
112. E.K. Hilmen, S. Skogestad, M.F. Doherty and M.F. Malone, "Integrated design, operation and control of batch extractive distillation with a middle vessel", *AIChE Annual Meeting*, 16-21 Nov. 1997, Los Angeles, Paper 201h.
113. B. Wittgens and S. Skogestad, "Potential energy savings of multivessel batch distillation", *AIChE Annual Meeting*, Los Angeles, 16-21 Nov. 1997, Paper 34d.



114. I.J. Halvorsen and S. Skogestad, "Use of feedback for indirect optimizing control: Application to petlyuk distillation", *IFAC symposium DYCOPS-5*, Corfu, Greece, 08-10 June 1998, 399-404.
115. K. Havre and S. Skogestad, "Selection of variables for regulatory control using pole vectors", *IFAC symposium DYCOPS-5*, Corfu, Greece, 08-10 June 1998, 614-619.
116. B. Wittgens and S. Skogestad, "Multivessel batch distillation - Potential energy savings", *IFAC symposium DYCOPS-5*, Corfu, Greece, 08-10 June 1998, 515-520.
117. K. Havre and S. Skogestad, "Performance limitations for unstable SISO plants", *Proceedings 1998 American Control Conference (ACC)*, Philadelphia, USA, 24-26 June 1998, 3234-3238
118. S. Skogestad and I.J. Halvorsen, "Self-optimizing control: Basic issues and Taylor series analysis ", Paper presented at COSY Workshop, Makedonia, 08-09 Oct. 1998
119. Truls Larsson and Sigurd Skogestad, "Limitations imposed by lower layer control configurations ", AICHE Annual Meeting, Miami Beach, 16-20 Nov. 1998
120. Sigurd Skogestad, Ivar J. Halvorsen and John C. Morud "Self-optimizing control: The basic idea and Taylor series analysis", AICHE Annual Meeting, Miami Beach, 16-20 Nov. 1998, Paper 229c
121. I.J. Halvorsen and S. Skogestad, " Use of Shortcut Methods to Analyse Optimal Operation of Petlyuk Distillation Columns", *Proc. Symposium PRES'99*, 30 May-2 June 1999, Budapest, Hungary.
122. I.J. Halvorsen, M. Serra and S. Skogestad, " Evaluation of Self-Optimizing Control Structures for an Integrated Petlyuk Distillation Column", *Proc. Symposium PRES'99*, 30 May-2 June 1999, Budapest, Hungary.
123. K. Havre and S. Skogestad, "Achievable  $H_\infty$ -performance of multivariable systems with unstable zeros and poles", Preprints 14th IFAC World Congress, Beijing, July 1999, Vo. D, 391-396.
124. S. Skogestad, I.J. Halvorsen, T. Larsson and M.S. Govatsmark, "Plantwide control: The search for the self-optimizing control structure", Preprints 14th IFAC World Congress, Beijing, July 1999, Vol. N, 325-330.
125. A. Faanes and S. Skogestad, "Control structure selection for serial processes with application to pH-neutralization", *Proc. European Control Conference*, Karlsruhe, Sept. 1999
126. T. Larsson and S. Skogestad, "Control of industrial heat integrated distillation columns", AICHE Annual Meeting, Dallas, 1-5 Nov. 1999.

127. T. Larsson, S. Skogestad and C-C. Yu, "Control of reactor and separator with recycle", AICHE Annual Meeting, Dallas, 1-5 Nov. 1999.
128. I.J. Halvorsen and S. Skogestad, "Improved analysis and understanding of the Petlyuk distillation column", AICHE Annual Meeting, Dallas, 1-5 Nov. 1999.
129. I.J. Halvorsen and S. Skogestad, "Analytic expressions of minimum energy consumption in multicomponent distillation: A revisit of the Underwood equations", AICHE Annual Meeting, Dallas, 1-5 Nov. 1999.
130. A. Faanes and S. Skogestad, "pH-neutralization: Integrated process and control design", Proc. IFAC-symposium Adchem'2000, Pisa, Italy, 14-16 June 2000, pp. 75-80.
131. S. Skogestad, "Self-optimizing control: A distillation case study", Proc. IFAC-symposium Adchem'2000, Pisa, Italy, 14-16 June 2000, pp. 1013-1018.
132. T. Larsson, S. Skogestad, K. Hestetun, "Self-optimizing control of a large-scale plant: The Tennessee Eastman process", Symposium Chemical Process Control 6, Tucson, Arizona, 7-12 Jan. 2001, Preprints pp. 481-486.
133. T. Lid, S. Strand, S. Skogestad, "On-line optimization of a crude unit heat exchanger network", Symposium Chemical Process Control 6, Tucson, Arizona, 7-12 Jan. 2001, Preprints pp. 476-480. Published in *AICHE Symposium Series*, **98** (326), pp. 403-407. ISBN 0-8169-0869-9 (2002).
134. M.S. Govatsmark, S. Skogestad, "Control structure selection for an evaporation process", European Symposium on Computer Aided Process Engineering 11, Kolding, Denmark, 27-30 May 2001, Elsevier ISBN 0444507094, pp. 657-662.
135. T. Lid, S. Skogestad, "Implementation issues for real-time optimization of crude heat exchanger network", European Symposium on Computer Aided Process Engineering 11, Kolding, Denmark, 27-30 May 2001, Elsevier ISBN 0444507094, pp. 1041-1046.
136. H. Engeliën, T. Larsson, S. Skogestad, "Simulation and optimization of heat integrated distillation columns" SIMS2001, Porsgrunn.
137. M.S. Govatsmark, S. Skogestad, "A method for selection of controlled variables and robust setpoints" SIMS2001, Porsgrunn.
138. I.J. Halvorsen, S. Skogestad, "Integrated Column Designs for Minimum Energy and Entropy Requirements in Multicomponent Distillation" AICHE Annual meeting, Topical conference on Separations Technology, Paper 23a, Reno, Nevada, November 5-9, 2001.

139. E.Storkaas, S. Skogestad and V. Alstad, "Stabilizing of desired flow regimes in pipelines" AICHE Annual meeting, Paper 287d, Reno, Nevada, November 5-9, 2001.
140. S. Skogestad, "Probably the best simple PID tuning rules in the world" AICHE Annual meeting, Paper 276h, Session on Advances in process control, Reno, Nevada, November 5-9, 2001.
141. Sigurd Skogestad, "Plantwide control: Towards a systematic procedure" (plenary lecture), European Symposium on Computer Aided Process Engineering 12, den Haag, Netherlands, 26-29 May 2002, Elsevier ISBN 0444511091, pp. 57-69.
142. Marius S. Govatsmark, Sigurd Skogestad, "Optimal number of stages in distillation with respect to controllability" European Symposium on Computer Aided Process Engineering 12, den Haag, Netherlands, 26-29 May 2002, Elsevier ISBN 0444511091, pp. 499-504.
143. Sigurd Skogestad, Kjetil Havre, Truls Larsson, "Control limitations for unstable plants" Proc. of IFAC World Congress, Barcelona, 21-26 July 2002, Paper T-Fr-M-15-1.
144. Marius S. Govatsmark, Sigurd Skogestad, "Selection of controlled variables and robust setpoints" Proc. of IFAC World Congress, Barcelona, 21-26 July 2002, Paper T-Mo-M-11-4.
145. Ivar J. Halvorsen and Sigurd Skogestad "Minimum energy and entropy requirements in multicomponent distillation", Proc. of *International conference of Distillation and Absorption*, Baden-Baden, Germany, 30 Sep. - 02 Oct. 2002, Paper 6-27. Published by VDI, Germany (ISBN 3-931384-37-3).
146. Hilde K. Engelen, Truls Larsson and Sigurd Skogestad "Implementation of optimal operation for heat-integrated distillation columns", Proc. of *International conference of Distillation and Absorption*, Baden-Baden, Germany, 30 Sep. - 02 Oct. 2002, Paper 3.3-3. Published by VDI, Germany (ISBN 3-931384-37-3).
147. S. Skouras and S. Skogestad "Separation of ternary heteroazeotropic mixtures in a closed multivessel batch distillation-decanter hybrid", Proc. of *International conference of Distillation and Absorption*, Baden-Baden, Germany, 30 Sep. - 02 Oct. 2002, Paper 5-4. Published by VDI, Germany (ISBN 3-931384-37-3).
148. V. Alstad and S. Skogestad, "Robust Operation by controlling the right variable combination" AICHE Annual meeting, Paper 247g, Indianapolis, 3-8 Nov. 2002.

149. M.S. Govatsmark, S. Skogestad and S. Ma'mun, "A plantwide control procedure with application to control structure design for a gas power plant" AICHE Annual meeting, Paper 259f, Indianapolis, 3-8 Nov. 2002.
150. E. Storkaas and S. Skogestad, "Stabilization of severe slugging based on a low-dimensional nonlinear model" AICHE Annual meeting, Paper 259e, Indianapolis, 3-8 Nov. 2002.
151. S. Skouras and S. Skogestad, "Separation of Ternary Heteroazeotropic Mixtures in a Multivessel Batch Distillation-Decanter Hybrid" AICHE Annual meeting, Paper 102d, Indianapolis, 3-8 Nov. 2002.
152. V. Alstad and S. Skogestad, "Combination of Measurements as Controlled Variables for Self-Optimizing Control", Proc. European Symposium on Computer Aided Process Engineering (ESCAPE-13), 01-04 June 2003, Lappeenranta, Finland. Published by Elsevier, ISBN 0-444-51368-X, pp. 353-358.
153. H.K. Engelen and S. Skogestad, "Selecting Appropriate Control Variables for a Heat Integrated Distillation System with Prefractionator", Proc. European Symposium on Computer Aided Process Engineering (ESCAPE-13), 01-04 June 2003, Lappeenranta, Finland. Published by Elsevier, ISBN 0-444-51368-X, pp. 407-412.
154. M.S. Govatsmark, S. Skogestad, G. Sobocan, and P. Glavic, "Application of a Plantwide Control Design Procedure to a Distillation Column with Heat Pump", Proc. European Symposium on Computer Aided Process Engineering (ESCAPE-13), 01-04 June 2003, Lappeenranta, Finland. Supplement volume, pp. 21-28.
155. S. Skouras and S. Skogestad, "Separation of Azeotropic Mixtures in Closed Batch Distillation Arrangements", Proc. European Symposium on Computer Aided Process Engineering (ESCAPE-13), 01-04 June 2003, Lappeenranta, Finland. Published by Elsevier, ISBN 0-444-51368-X, pp. 935-940.
156. E. Storkaas and S. Skogestad, "A low-dimensional dynamic model of severe slugging for control design and analysis", Proc. 11th International Conference on Multiphase flow (Multiphase'03), San Remo, Italy, 11-13 June 2003, Published by BHR Group, ISBN 1-85598-048-7, pp. 117-133.
157. A. Faanes and S. Skogestad, "Feedforward control under the presence of uncertainty", European Control Conference (ECC'03), Cambridge, 01-04 September 2003. Published on CD by IEE, UK (6 pages).
158. A. Faanes and S. Skogestad, "Offset-free Tracking With MPC Under Uncertainty: Experimental Verification" (poster), AICHE Annual Meeting, San Francisco, Nov. 2003, Poster 439b.

159. V. Kariwala, S. Skogestad, J.F. Forbes, E.S. Meadows, "System stabilization using minimum input energy" (poster), AIChE Annual Meeting, San Francisco, Nov. 2003, Poster 439z.
160. S. Skogestad, "Control structure design: What should we control, measure and manipulate?" . Invited plenary lecture at First African Control Conference, Cape Town, South Africa, 03-05 December 2003.
161. S. Skogestad, "Self-optimizing control: From key performance indicators to control of biological systems", . 8th International symposium on Process Systems Engineering (PSE-2003), 05-10 Jan. 2004, Kunming, China (extended version to be published in special issue of CCE).
162. E. Storkaas and S. Skogestad, "Cascade control of unstable systems with application to stabilization of slug flow" . International Symposium of Advanced Control of Chemical Processes (Adchem-2003), Hong Kong, 11-14 Jan. 2004.
163. V. Alstad and S. Skogestad, "Combinations of measurements as controlled variables: Application to a Petlyuk distillation column" . International Symposium of Advanced Control of Chemical Processes (Adchem-2003), Hong Kong, 11-14 Jan. 2004.
164. S. Skogestad, " Lower limit on controller gain for acceptable disturbance rejection" . International Symposium of Advanced Control of Chemical Processes (Adchem-2003), Hong Kong, 11-14 Jan. 2004.
165. V. Alstad and S. Skogestad, "Optimal operation of Petlyuk distillation column: Energy savings by over-fractionating", Proc. European Symposium on Computer Aided Process Engineering (ESCAPE-14), 16-19 May 2004, Lisboa, Portugal. Published by Elsevier, ISBN 0-444-51694-8, pp. 547-552.
166. V. Kariwala, S. Skogestad, F. Forbes and E.S. Meadows "Input performance limitations of feedback control", Proceedings of the 2004 American Control Conference (ACC), Boston, USA, July 2004 (Paper ThA04.1).
167. E.S. Hori, S. Skogestad and W.H. Kwong, "Minimization of state deviations using perfect indirect control" . Proceedings of the XV Brazilian Congress of Chemical Engineering, 26-29 Sept., 2004
168. E.S. Hori, S. Skogestad and W.H. Kwong, "Complexity measure for block diagrams" . Proceedings of the XV Brazilian Congress of Chemical Engineering, 26-29 Sept., 2004
169. F. Zenith and S. Skogestad, "Dynamic Modelling for Control of Fuel Cells", AIChE Annual Meeting, Austin, Texas, Nov. 2004, Presentation 23b.

170. V. Alstad and S. Skogestad, "Self-optimizing control: Optimal measurement selection", AICHE Annual Meeting, Austin, Texas, Nov. 2004, Poster 403e.
171. E. Storkaas and S. Skogestad, "Effect of Input Rate Limitation on Controllability", AICHE Annual Meeting, Austin, Texas, Nov. 2004, Presentation 406d.
172. S. Skogestad and A.C.B. de Araujo, "Controllability of processes with large gains and valve stiction", AICHE Annual Meeting, Austin, Texas, Nov. 2004, Poster 414b.
173. M. Mulas and S. Skogestad, "Control structure analysis for an activated sludge process", 7th Italian conference on chemical engineering (ICheaP-7), 15-18 May 2005, Naxos, Italy. Published in *AIDIC Conference Series*, Vol 7, ISBN 0390-2358, 229-238.
174. H. Sivertsen and S. Skogestad, "Anti-slug control experiments on a small-scale two-phase loop", Proc. European Symposium on Computer Aided Process Engineering (ESCAPE-15), 29 May - 1 June 2005, Barcelona, Spain. Published by Elsevier, ISBN 0-444-51987-4, pp. 1021-1026.
175. E.S. Hori, S. Skogestad and W.H. Kwong, "Use of perfect indirect control to minimize state deviations", Proc. European Symposium on Computer Aided Process Engineering (ESCAPE-15), 29 May - 1 June 2005, Barcelona, Spain. Published by Elsevier, ISBN 0-444-51987-4, pp. 1219-1224.
176. J.B. Jensen and S. Skogestad, "Control and optimal operation of simple heat pump cycles", Proc. European Symposium on Computer Aided Process Engineering (ESCAPE-15), 29 May - 1 June 2005, Barcelona, Spain. Published by Elsevier, ISBN 0-444-51987-4, pp. 1429-1434.
177. F. Zenith and S. Skogestad, "Dynamic modelling and control of polybenzimidazole fuel cells", Proceedings 18th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2005), Trondheim, Norway, 18-20 June 2005, Published by Tapir Academic Press, ISBN 82-519-2041-8i, pp. 1203-1210.
178. A. Araujo, and S. Skogestad "Controllability of processes with large gains", 16th IFAC World Congress, Prague, 4-8 July 2005. CD-rom published by International Federation of Automatic Control.
179. E.M.B. Aske, S. Strand and S. Skogestad, "Implementation of MPC on a deethanizer at Kt gas plant", 16th IFAC World Congress, Prague, 4-8 July 2005. CD-rom published by International Federation of Automatic Control.

180. E. Storakaas and S. Skogestad, "Controllability analysis of an unstable, non-minimum phase process", 16th IFAC World Congress, Prague, 4-8 July 2005. CD-rom published by International Federation of Automatic Control.
181. H. Sivertsen and S. Skogestad, "Cascade control experiments of riser slug flow using topside measurements", 16th IFAC World Congress, Prague, 4-8 July 2005. CD-rom published by International Federation of Automatic Control.
182. V. Kariwala and S. Skogestad, "Computational approach for adjudging Feasibility of Acceptable Disturbance Rejection", AIChE Annual Meeting, Cincinnati, USA, Nov. 2005, Presentation 9b.
183. V. Kariwala and S. Skogestad, "Control structure design: New developments and future directions", AIChE Annual Meeting, Cincinnati, USA, Nov. 2005, Presentation 64f.
184. F. Zenith and S. Skogestad, "Control of a Fuel-Cell Powered DC Electric Vehicle Motor", AIChE Annual Meeting, Cincinnati, USA, Nov. 2005, Paper and Presentation 398c.
185. V. Kariwala and S. Skogestad, "Limits of Disturbance Rejection for Indirect Control", 2005 IEEE conference on decision and control (CDC) and 2005 European Control Conference (ECC) (combined), Seville, Spain, 12-15 Dec. 2005, Paper/Presentation.
186. A. Araujo, M.S. Govatsmark and S. Skogestad, "Application of plantwide control to large scale systems. Part I - Self-optimizing control of the HDA process", *Proceedings Adchem 2006* (IFAC symp. on Advanced control of chemical processes), Gramado, Brazil, 2-5 April 2006, pp. 1049-1054.
187. J.B. Jensen and S. Skogestad, "Optimal operation of a simple LNG process", *Proceedings Adchem 2006* (IFAC symp. on Advanced control of chemical processes), Gramado, Brazil, 2-5 April 2006, pp. 241-246.
188. H. Sivertsen, J.M. Godhavn, A. Faanes and S. Skogestad, "Control solutions for subsea processing and multiphase transport" *Proceedings Adchem 2006* (IFAC symp. on Advanced control of chemical processes), Gramado, Brazil, 2-5 April 2006, pp. 1069-1074.
189. J. Strandberg and S. Skogestad, "Stabilizing control of an integrated 4-product Kaibel column", *Proceedings Adchem 2006* (IFAC symp. on Advanced control of chemical processes), Gramado, Brazil, 2-5 April 2006, pp. 623-628.
190. A. Araujo, M. Baldea, S. Skogestad and P. Daoutidis, "Time scale separation and the link between open-loop and closed-loop dynamics", In: *Proc.*

*PSE-ESCAPE Symposium*, 10-13 July 2006, Garmisch-Partenkirchen, Germany. Published by Elsevier, ISBN 0-444-52969-1 978-0-444-52969-5, pp. 1455-1460.

191. E.M.B. Aske, S. Strand and S. Skogestad, "Coordinator MPC with focus on maximizing throughput", In: *Proc. PSE-ESCAPE Symposium*, 10-13 July 2006, Garmisch-Partenkirchen, Germany. Published by Elsevier, ISBN 0-444-52969-1 978-0-444-52969-5, pp. 1203-1208.
192. J.B. Jensen and S. Skogestad, "Optimal operation of a mixed fluid cascade LNG plant", In: *Proc. PSE-ESCAPE Symposium*, 10-13 July 2006, Garmisch-Partenkirchen, Germany. Published by Elsevier, ISBN 0-444-52969-1 978-0-444-52969-5, pp. 1568-1574.
193. V. Kariwala and S. Skogestad, "Branch and Bound Methods for Control Structure Design", In: *Proc. PSE-ESCAPE Symposium*, 10-13 July 2006, Garmisch-Partenkirchen, Germany. Published by Elsevier, ISBN 0-444-52969-1 978-0-444-52969-5, pp. 1371-1376.
194. S. Skogestad, "The dos and donts of distillation column control", Proceedings Distillation and Absorption, London, UK, 4-6 Sept. 2006, In: *ICHEME Symposium Series*, **152**, ISBN-13 978 0 85295 505 5, pp. 28-43 (2006).
195. E.S. Hori, S. Skogestad and M.A. Al-Arfaj, "Self-optimizing control configurations for two-product distillation columns", Proceedings Distillation and Absorption, London, UK, 4-6 Sept. 2006, In: *ICHEME Symposium Series*, **152**, ISBN-13 978 0 85295 505 5, pp. 590-599 (2006).
196. J. Strandberg and S. Skogestad, "Stabilizing operation of a 4-product integrated Kaibel column", Proceedings Distillation and Absorption, London, UK, 4-6 Sept. 2006, In: *ICHEME Symposium Series*, **152**, ISBN-13 978 0 85295 505 5, pp. 638-647 (2006).
197. V. Lersbamrungsuk, S. Skogestad and T. Srinophakun, "A Simple Strategy for Optimal Operation of Heat Exchanger Networks", International Conference on Modeling in Chemical and Biological Engineering Sciences (CBES 2006), Bangkok, Thailand, 25-27 Oct. 2006. Paper 180 (12 pages).
198. I.J. Halvorsen and S. Skogestad, "Minimum Energy for the four-product Kaibel-column", AIChE Annual Meeting, San Francisco, USA, Nov. 2006, Paper and Presentation 216d.
199. E.M.B. Aske, S. Strand and S. Skogestad, "Coordinator MPC for maximization of plant throughput", AIChE Annual Meeting, San Francisco, USA, Nov. 2006, Abstract and Presentation 330b.
200. A.C.B. Araujo and S. Skogestad, "A plantwide control procedure applied to the HDA process", AIChE Annual Meeting, San Francisco, USA, Nov. 2006, Abstract and Presentation 406d.



201. M. Baldea, P. Daoutidis, A.C.B. Araujo, S. Skogestad, "Integrated Process Networks: Nonlinear Control System Design for Optimality and Dynamic Performance", AICHE Annual Meeting, San Francisco, USA, Nov. 2006, Abstract and Presentation 222c.
202. V. Kariwala, J.F. Forbes and S. Skogestad, "Mu-interaction measure for unstable systems", *9th International IEEE Conference on Control, Automation, Robotics and Vision (ICARCV 2006)*, Singapore, 05-08 Dec. 2006, Paper 526 (6 pages).
203. E. M. B. Aske, S. Skogestad, S. Strand, "Throughput maximization by improved bottleneck control", 8th International Symposium on Dynamics and Control of Process Systems (DYCOPS), vol. 1, June 6-8 2007, Cancun, Mexico, pp. 63-68.
204. E. S. Hori, S. Skogestad, "Maximum Gain Rule for Selecting Controlled Variables", 8th International Symposium on Dynamics and Control of Process Systems (DYCOPS), vol. 2, June 6-8 2007, Cancun, Mexico, pp. 129-134
205. M. Mulas, R. Baratti, S. Skogestad, "Controlled Variables Selection, for a Biological Wastewater Treatment", 8th International Symposium on Dynamics and Control of Process Systems (DYCOPS), vol. 2, June 6-8 2007, Cancun, Mexico, pp. 141-146
206. S. Narasimhan, S. Skogestad, "Implementation of optimal Operation using Off-Line Calculations", 8th International Symposium on Dynamics and Control of Process Systems (DYCOPS), vol. 2, June 6-8 2007, Cancun, Mexico, pp. 121-126
207. E.S. Hori and S. Skogestad, "Control structure selection of a deethanizer column with partial condenser", European Congress of Chemical Engineering (ECCE-6), Copenhagen, 16-20 September 2007. Abstracts published in "ECCE-6 Book of abstracts", Vol. 1, ISBN 978-87-91435-56-0. Full paper available on conference CD.
208. H. Manum, S. Narasimham, S. Skogestad, "A new approach to explicit MPC", Paper 65b, AICHE Annual Meeting, Salt Lake City, USA, Nov. 2007.
209. H. Dahl-Olsen, S. Narasimham, S. Skogestad, "Near-optimal feedback control of dynamic processes", Paper 150a, AICHE Annual Meeting, Salt Lake City, USA, Nov. 2007.
210. H. Manum, S. Narasimham and S. Skogestad, "A new approach to explicit MPC using self-optimizing control", *Proc. American Control Conference (ACC)*, 435-440, Seattle, June 2008.

211. H. Dahl-Olsen, S. Narasimham and S. Skogestad, "Optimal output selection for control of batch processes", *Proc. American Control Conference (ACC)*, 2870-2871, Seattle, June 2008.
212. J. Cai, J.B. Jensen, S. Skogestad and J. Stoustrup, "One the trade-off between energy consumption and food quality loss in supermarket refrigeration systems", *Proc. American Control Conference (ACC)*, 2880-2885, Seattle, June 2008.
213. H. Manum, S. Narasimham and S. Skogestad, "Explicit MPC with output feedback using self-optimizing control", *Proc. 17th IFAC World Congress. International federation of Automatic Control*, 6956-6961, Seoul, Korea, July 2008.
214. E.M.B. Aske, S. Strand, S. Skogestad, "Implementation of coordinator MPC on a large-scale gas plant", Paper 409g, AICHE Annual Meeting, Philadelphia, USA, Nov. 2008.
215. J. Jhke, S. Narasimhan, S. Skogestad, "Explicit real-time optimization", Paper 471a, AICHE Annual Meeting, Philadelphia, USA, Nov. 2008.
216. S. Skogestad, "Feedback: Still the simplest and best solution," (Plenary lecture). *4th IEEE Conference on Industrial Electronics and Applications (ICIEA)*, 25-27 May 2009, Xi'an, China
217. J. Jhke, H. Smedsrud, S. Skogestad, H. Manum. "Optimal Operation of a Waste Incineration Plant for District Heating" *Proc. American Control Conference*, St. Louis, USA, June 2009, pp. 665-670. ISBN: 978-1-4244-4524-0
218. H. Manum, S. Skogestad, J. Jhke, "Convex initialization of the H<sub>2</sub>-optimal static output feedback problem" *Proc. American Control Conference*, St. Louis, USA, June 2009, pp. 1724-1729. ISBN: 978-1-4244-4524-0
219. J.J. Downs, S. Skogestad, "An industrial and academic perspective on plantwide control", *Proc. IFAC Symposium on Advanced Control of Chemical Processes (Adchem 2009)*, pp. 119-130, Koc University, Istanbul, Turkey, 12-15 July 2009.
220. E.M.B. Aske, S. Strand, S. Skogestad, "Industrial Implementation of a Coordinator MPC for Maximizing Throughput at a Large-Scale Gas Plant", *Proc. IFAC Symposium on Advanced Control of Chemical Processes (Adchem 2009)*, pp. 132-137. Koc University, Istanbul, Turkey, 12-15 July 2009.
221. J.Jhke, S. Skogestad, "Optimally Invariant Variable Combinations for Nonlinear Systems", *Proc. IFAC Symposium on Advanced Control of Chemical Processes (Adchem 2009)*, pp. 551-556, Koc University, Istanbul, Turkey, 12-15 July 2009.

222. E.M.B. Aske, S. Strand, S. Skogestad, "Dynamic degrees of freedom for tighter bottleneck control", *Proc. 10th International Symposium on Process Systems Engineering (PSE2009)*, Salvador, Brazil, 16-20 Aug. 2009, In: Book series *Computer Aided Chemical Engineering*, Vol. 27, Elsevier, 2009, pp. 1275-1280. ISBN-13: 978-0-444-53472-9
223. H. Manum, C.N. Jones, J. Lfberg, M. Morari, S. Skogestad. "Bilevel programming for analysis of low-complexity control of linear systems with constraints." *Proc. Conference on Decision and Control (CDC)*, Shanghai, China, December 2009, pp. 946-951. ISBN: 978-1-4244-3872-3/09
224. Mehdi Panahi and S. Skogestad, "Self-optimizing control of a GTL process", 1st Trondheim Gas Technology Conference, 21-22 Oct. 2009.
225. Magnus Glosli Jacobsen and S. Skogestad, "Choosing optimal controlled variables for the C3-MR process for liquification of natural gas", 1st Trondheim Gas Technology Conference, 21-22 Oct. 2009.
226. Maryam Ghadrnan, S. Skogestad and I.J. Halvorsen, "Selection of controlled variables for self-optimizing control of thermally coupled distillation columns", 1st Trondheim Gas Technology Conference, 21-22 Oct. 2009.
227. H. Dahl-Olsen and S. Skogestad, "Near-optimal control of batch processes - by tracking of approximated sufficient conditions of optimality." Oral Presentation, AIChE Annual Meeting, Nashville, USA, Nov. 2009.
228. Ramprasad Yelchuru, Sigurd Skogestad, Henrik Manum, MIQP formulation for Controlled Variable Selection in Self Optimizing Control *9th IFAC Symposium on Dynamics and Control of Process Systems (DYCOPS-9)* Leuven, Belgium, 5-7 July 2010, pp. 61-66 (2010).
229. Mohammad Shamsuzzohaa, Sigurd Skogestad, Ivar J. Halvorsen On-Line PI Controller Tuning Using Closed-Loop Setpoint Response *9th IFAC Symposium on Dynamics and Control of Process Systems (DYCOPS-9)* Leuven, Belgium, 5-7 July 2010, pp. 497-502 (2010).
230. Martin Kvernland, Ivar Halvorsen, Sigurd Skogestad, Model Predictive Control of a Kaibel Distillation Column *9th IFAC Symposium on Dynamics and Control of Process Systems (DYCOPS-9)* Leuven, Belgium, 5-7 July 2010, pp. 539-544 (2010).
231. Morten Bakke, Tor A. Johansen, Sigurd Skogestad, Effect of Varying Controller Parameters in Closed-Loop Subspace Identification *9th IFAC Symposium on Dynamics and Control of Process Systems (DYCOPS-9)* Leuven, Belgium, 5-7 July 2010, pp. 581-586 (2010).
232. Johannes Jhke, Sigurd Skogestad, Self-optimizing Control and NCO tracking in the Context of Real-Time Optimization *9th IFAC Symposium on*

- Dynamics and Control of Process Systems (DYCOPS-9* Leuven, Belgium, 5-7 July 2010, pp. 594-599 (Keynote paper) (2010).
233. Michela Mulas, Antonio Carlos Brandao de Ara'ujo, Roberto Baratti, Sigurd Skogestad Optimized Control Structure for a Wastewater Treatment Benchmark *9th IFAC Symposium on Dynamics and Control of Process Systems (DYCOPS-9* Leuven, Belgium, 5-7 July 2010, pp. 647-652 (2010).
  234. Ramprasad Yelchuru, Sigurd Skogestad, MIQP formulation for Optimal Controlled Variable Selection in Self Optimizing Control, Proceedings PSE ASIA, Singapore, 25-28 July 2010. ISBN: 978-981-08-6395-1 [USB Thumb-Drive].
  235. Igor Dejanovic, Ljubica Matijasevic, Zarko Olujic, Ivar Halvorsen, Sigurd Skogestad, Helmut Jansen and Bjrn Kaibel CONCEPTUAL DESIGN AND COMPARISON OF FOUR-PRODUCTS DIVIDING WALL COLUMNS FOR SEPARATION OF A MULTICOMPONENT AROMATICS MIXTURE, Proceedings Symposium Distillation and Absorption 2010, Eindhoven, The Netherlands, 12-15 September 2010, pp. 85-90 ISBN 978-90-386-2215-6.
  236. Ivar J. Halvorsen, Igor Dejanovic, Ljubica Matijasevic, Zarko Olujic and Sigurd Skogestad, ESTABLISHING INTERNAL CONFIGURATION OF DIVIDING WALL COLUMN FOR SEPARATION OF A MULTICOMPONENT AROMATICS MIXTURE, Proceedings Symposium Distillation and Absorption 2010, Eindhoven, The Netherlands, 12-15 September 2010, pp. 91-96, ISBN 978-90-386-2215-6.
  237. Jens Strandberg Sigurd Skogestad and Ivar J. Halvorsen, PRACTICAL CONTROL OF DIVIDING-WALL COLUMNS, Proceedings Symposium Distillation and Absorption 2010, Eindhoven, The Netherlands, 12-15 September 2010, pp. 527-532, ISBN 978-90-386-2215-6.
  238. Maryam Ghadrnan, Ivar Halvorsen and Sigurd Skogestad, OPTIMAL OPERATION OF THERMALLY-COUPLED KAIBEL DISTILLATION COLUMNS, Proceedings Symposium Distillation and Absorption 2010, Eindhoven, The Netherlands, 12-15 September 2010, pp. 563-568, ISBN 978-90-386-2215-6.
  239. Rahul Jagtap, Nitin Kaistha and Sigurd Skogestad, "Plantwide Control for Economic Operation of a Recycle Process", *Proc. 20th European Symposium of Computer Aided Process Systems Engineering (ESCAPE20)*, Ischia, Italy, 06-09 June 2010, In: Book series *Computer Aided Chemical Engineering*, Vol. 28, Elsevier, 2010, pp. 499-504, ISBN 13: 978-0-444-53569-6
  240. Mohammad Shamsuzzoha, Sigurd Skogestad, Ivar J. Halvorsen, "A simple approach for on-line PI controller tuning using closed-loop setpoint

- responses”, *Proc. 20th European Symposium of Computer Aided Process Systems Engineering (ESCAPE20)*, Ischia, Italy, 06-09 June 2010, In: Book series *Computer Aided Chemical Engineering*, Vol. 28, Elsevier, 2010, pp. 619-624, ISBN 13: 978-0-444-53569-6
241. Sigurd Skogestad, ”A Systematic Approach to Plantwide Control”, *Symposium on Recent and Emerging Advances in Chemical Engineering (REACH)*, Indian Institute of Technology Madras, Chennai, India. December 2-4, 2010. pp. 132-139 (2010).
242. Henrik Manum and Sigurd Skogestad, ”BILEVEL PROGRAMMING FOR ANALYSIS OF REDUCED MODELS FOR USE IN MODEL PREDICTIVE CONTROL”, *International Conference Cybernetics and Informatics*, Vysna Boca, Slovak republic, February 10-13, 2010 (10 pages).
243. Sigurd Skogestad, ”FEEDBACK: STILL THE SIMPLEST AND BEST SOLUTION”, *International Conference Cybernetics and Informatics*, Vysna Boca, Slovak republic, February 10-13, 2010 (10 pages).
244. Yelchuru, R., Skogestad, S., ”Optimal controlled variable selection for individual process units in self optimizing control with MIQP formulations”, *Proc. American Control Conference (ACC)*, pp. 342-347, San Francisco, June 2011, ISSN 0743-1619.
245. Alcara, S., Skogestad, S., Grimholt, C., Pedret, C., Vilanova, R. ”Tuning PI controllers based on H-infinity Weighted Sensitivity”, 19th Mediterranean Conference on Control and Automation (MED 2011), art. no. 5983053, pp. 1301-1306, Corfu, Greece, June 2011
246. Ghadrnan, M., Halvorsen, I.J., Skogestad, S., ”A Shortcut Design for Kaibel Columns Based on Minimum Energy Diagrams”, *Proc. 21th European Symposium of Computer Aided Process Systems Engineering (ESCAPE21)*, Greece, June 2011, In: Book series *Computer Aided Chemical Engineering*, Vol. 29 (8), Elsevier, 2011, pp. 356-360,
247. Gera, V., Kaistha, N., Panahi, M., Skogestad, S., ”Plantwide Control of a Cumene Manufacture Process”, *Proc. 21th European Symposium of Computer Aided Process Systems Engineering (ESCAPE21)*, Greece, June 2011, In: Book series *Computer Aided Chemical Engineering*, Vol. 29 (8), Elsevier, 2011, pp. 522-526,
248. Jhke, J., Skogestad, S., ”Controlled Variables from Optimal Operation Data”, *Proc. 21th European Symposium of Computer Aided Process Systems Engineering (ESCAPE21)*, Greece, June 2011, In: Book series *Computer Aided Chemical Engineering*, Vol. 29 (8), Elsevier, 2011, pp. 753-757,
249. Jacobsen, M.G., Skogestad, S., ”Optimization of LNG plants - challenges and strategies”, *Proc. 21th European Symposium of Computer Aided*

- Process Systems Engineering (ESCAPE21)*, Greece, June 2011, In: Book series *Computer Aided Chemical Engineering*, Vol. 29 (8), Elsevier, 2011, pp. 1854-1858,
250. I. Dejanovic, Lj. Matijasevic, I. Halvorsen, S. Skogestad, B. Kaibel, H. Jansen, Z. Olujić, “Designing packed multi-partition wall dividing wall columns”, *2011 AIChE Spring National Meeting*, Chicago, March 2011.
  251. Deeptanshu Dwivedi, Ivar J. Halvorsen, Sigurd Skogestad, “Control Structure Design for Optimal Operation of 4-Product Thermally Coupled Columns”, *2011 AIChE Spring National Meeting*, Chicago, March 2011.
  252. Maryam Ghadrđan, Ivar J. Halvorsen and Sigurd Skogestad, “Composition Estimation in Dividing-Wall Columns Using Temperature Measurements”, *2011 AIChE Spring National Meeting*, Chicago, March 2011.
  253. Ivar J. Halvorsen, Sigurd Skogestad, Igor Dejanovic, Ljubica Matijasevic, Zarko Olujić “Multi-product dividing wall columns: A simple and effective assessment and conceptual design”, 14th International Conference on *Intl. Symposium on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction /PRES'11*, May 2011, Florence, Italy. In: *CHEMICAL ENGINEERING TRANSACTIONS*, Volume 25, 2011, pp. 611-616. ISBN 978-88-95608-16-7.
  254. Esmail Jahanshahi and Sigurd Skogestad “Simplified Dynamical Models for Control of Severe Slugging in Multiphase Risers”, 18th IFAC World Congress, Milan, 28 Aug-02 Sep 2011, pp. 1634-1639. IFAC-PapersOnLine, ISSN 1474-6670.
  255. Ramprasad Yelchuru and Sigurd Skogestad “Optimal Controlled Variable Selection with Structural Constraints Using MIQP Formulations”, 18th IFAC World Congress, Milan, 28 Aug-02 Sep 2011, pp. 4977-4982. IFAC-PapersOnLine, ISSN 1474-6670.
  256. J. Jhke and S. Skogestad “Optimal operation by controlling the gradient to zero”, 18th IFAC World Congress, Milan, 28 Aug-02 Sep 2011, pp. 6073-6078. IFAC-PapersOnLine, ISSN 1474-6670.
  257. J. Jhke, M. Fikar and S. Skogestad “Self-optimizing Invariants in Dynamic Optimization”, 2011 50th IEEE Conference on Decision and Control and European Control Conference (CDC-ECC), Orlando, FL, USA, December 12-15, 2011, pp. 7753-7758. Paper: 978-1-61284-799-3/11. ISSN 0191-2216
  258. D. Dwivedi, I.J. Halvorsen, S. Skogestad, “Energy efficient technologies Control structure design for four product Petlyuk column”, 8th European Conference of Chemical Engineering (ECCE 2011), Berlin, 25-29 Sept. 2011.

259. M. Ghadrđan, I.J. Halvorsen, S. Skogestad, “Manipulation of vapour split in thermally-coupled distillation arrangements: is it necessary?”, 8th European Conference of Chemical Engineering (ECCE 2011), Berlin, 25-29 Sept. 2011.
260. M.G. Jacobsen, S. Skogestad, “Plantwide control - identifying and switching between active constraint regions”, 8th European Conference of Chemical Engineering (ECCE 2011), Berlin, 25-29 Sept. 2011.
261. M. Panahi and S. Skogestad, Optimal Operation of a CO<sub>2</sub> Capturing Plant for a Wide Range of Disturbances *2011 AIChE National Meeting*, Minneapolis, October 2011. Presentation 316b
262. M. Panahi and S. Skogestad, Controlled Variables Selection for a Gas-to-Liquids Process *2011 AIChE National Meeting*, Minneapolis, October 2011. Presentation 468d
263. S. Skogestad, MIMO Controllability and Decentralized and Plantwide Control *2011 AIChE National Meeting*, Minneapolis, October 2011. Presentation 161b
264. M.G. Jacobsen and S. Skogestad, Active Constraint Regions for Economically Optimal Operation of Distillation Columns. *2011 AIChE National Meeting*, Minneapolis, October 2011. Presentation 215f
265. I.J. Halvorsen, S. Skogestad, I. Dejanovic, Z. Oluđic. Optimal Design of Energy-Efficient Integrated Distillation Processes for Multicomponent Ideal and Non-Ideal Mixtures by Use of the Vmin-Diagram *2011 AIChE National Meeting*, Minneapolis, October 2011. Presentation 423c
266. D. Dwivedi, I.J. Halvorsen and S. Skogestad. Active Vapor Split Control for Fully Coupled Columns: Experimental Studies *2011 AIChE National Meeting*, Minneapolis, October 2011. Presentation 492a
267. R. Yelchuru, S. Skogestad and D. Dwivedi. Optimal Measurement Selection for Controlled Variables for Kaibel Distillation Column *2011 AIChE National Meeting*, Minneapolis, October 2011. Presentation 652e
268. M. Ghadrđan, C. Grimholt, S. Skogestad, I.J. Halvorsen. Loss Method: A Static Estimator Applied for Product Composition Estimation From Distillation Column Temperature Profile *2011 AIChE National Meeting*, Minneapolis, October 2011. Presentation 669f
269. C. Grimholt and S. Skogestad “Optimal PI-Control and Verification of the SIMC Tuning Rule”, *IFAC Conference on Advances in PID Control (PID'12)*, Brescia, Italy, 28-30 March 2012. IFAC-PapersOnLine, ISSN 1474-6670.

270. S. Alcara, R. Vilanova, C. Pedret, S. Skogestad “A look into robustness/performance and servo/regulation issues in PI tuning”, *IFAC Conference on Advances in PID Control (PID'12)*, Brescia, Italy, 28-30 March 2012. IFAC-PapersOnLine, ISSN 1474-6670.
271. E Jahanshahi, S Skogestad, AH Helgesen “Controllability analysis of severe slugging in well-pipeline-riser systems”, Proceedings of the 2012 IFAC Workshop on Automatic Control in Offshore Oil and Gas Production, Norwegian University of Science and Technology, Trondheim, Norway, May 31 - June 1, 2012, pp. 101-108
272. J Jhke, S Skogestad “A Batch Reactor Heat Recovery Challenge Problem”, Nordic Optimization Symposium, Trondheim, June 2012
273. J Jhke, S Skogestad “Optimization by Controlling Self-Optimizing Measurements”, Nordic Optimization Symposium, Trondheim, June 2012
274. D Dwivedi, IJ Halvorsen, S Skogestad “Dynamic behaviour and control of extended Petlyuk distillation arrangements”, In: Ian David Lockhart Bogle and Michael Fairweather (Editors), Proceedings of the 22nd European Symposium on Computer Aided Process Engineering, 17 - 20 June 2012, London. In: Book series *Computer Aided Chemical Engineering*, Vol. 30 (B), Elsevier, 2012, ISBN 978-0-444-59431-0, pp. 777-781,
275. E Jahanshahi, S Skogestad, H Hansen, “Control Structure Design for Stabilizing Unstable Gas-Lift Oil Wells” Preprints of the *8th IFAC Symposium on Advanced Control of Chemical Processes (Adchem)*, Furama Riverfront Hotel, Singapore, July 10-13, 2012. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670. pp. 93-100.
276. M. Ghadrđan, S Skogestad, IJ Halvorsen, “Economically Optimal Operation of Kaibel Distillation Column: Fixed Boilup Rate”, Preprints of the *8th IFAC Symposium on Advanced Control of Chemical Processes (Adchem)*, Furama Riverfront Hotel, Singapore, July 10-13, 2012. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670. pp. 744-749.
277. J. Jaschke, S Skogestad, “Economically Optimal Controlled Variables for Parallel Units - Application to Chemical Reactors”, Preprints of the *8th IFAC Symposium on Advanced Control of Chemical Processes (Adchem)*, Furama Riverfront Hotel, Singapore, July 10-13, 2012. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670. pp. 768-773.
278. N. Magbool Jan, S. Narasimhan, S. Skogestad, “Economic Back-Off Selection Based on Optimal Multivariable Controller”, Preprints of the *8th IFAC Symposium on Advanced Control of Chemical Processes (Adchem)*,



- Furama Riverfront Hotel, Singapore, July 10-13, 2012. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670. pp. 792-797.
279. R. Yelchuru, S. Skogestad, “Quantitative Methods for Optimal Regulatory Layer Selection”, Preprints of the *8th IFAC Symposium on Advanced Control of Chemical Processes (Adchem)*, Furama Riverfront Hotel, Singapore, July 10-13, 2012. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670. pp. 798-803.
  280. M. Ghadrddan, S Skogestad, C Grimholt, IJ Halvorsen, “Estimation of Primary Variables from Combination of Secondary Measurements: Comparison of Alternative Methods for Monitoring and Control”, Preprints of the *8th IFAC Symposium on Advanced Control of Chemical Processes (Adchem)*, In: I.A. Karimi and Rajagopalan Srinivasan (Editors), *Proceedings of the 11th International Symposium on Process Systems Engineering*, 15-19 July 2012, Singapore, pp. 925-929.
  281. J Jhke, S Skogestad “Control structure selection for optimal operation of a heat exchanger network”, UKACC International Conference on Control 2012. Cardiff, UK, 3-5 September 2012. Paper: 978-1-4673-1558-6/1. 148-153
  282. A. Araujo, S Gallani, M Mulas, S Skogestad, “Sensitivity of optimal operation of an activated sludge process model”, UKACC International Conference on Control 2012. Cardiff, UK, 3-5 September 2012. Paper: 978-1-4673-1558-6/12. 259-264.
  283. J.C.S. DUTRA, S. SKOGESTAD, J.C.S. PINTO, E.L. LIMA, CONTROLE OTIMIZANTE DE UMA COLUNA DE DESTILAO BINRIA SELF OPTIMIZING CONTROL DESING FOR A BINARY DISTILLATION COLUMN (in Portugese), Paper (12 pages) presented at COBEQ 2012, 19th Brazilian Congress in Chemical Engineering, Buzios, RJ, Brazil, 9-12 September 2012.
  284. Ambari Khanam, M. Shamsuzzoha, Sigurd Skogestad. ”Operation of energy efficient divided wall column”, In: Andrzej Kraslawski and Ilkka Turunen (Editors), Proceedings of the 23rd European Symposium on Computer Aided Process Engineering (ESCAPE’23), 09 - 12 June 2013, Lappeenranta, Finland. In: Book series *Computer Aided Chemical Engineering*, Vol. 32, Elsevier, 2013, ISBN 978-0-444-63234-0, pp. 235-240.
  285. E Jahanshahi, S Skogestad, EI Grotli Anti-slug control experiments using nonlinear observers American Control Conference (ACC), Washington DC, June 2013, 1056-1062 (2013). ISBN 978-1-4799-0176-0
  286. E Jahanshahi, S Skogestad, M Lieungh Subsea solution for anti-slug control of multiphase risers European Control Conference (ECC), Zurich, July 2013, pp. 4094-4099 (2013). ISBN 978-3-952-41734-8.

287. Nabil Magbool Jan, Sigurd Skogestad, Sridharakumar Narasimhan Optimal selection of sensor network and backed-off operating point based on economics European Control Conference (ECC), Zurich, July 2013, pp. 4472-4477 (2013). ISBN 978-3-952-41734-8
288. Esmail Jahanshahi, Sigurd Skogestad, Esten I. Grotli. Nonlinear model-based control of two-phase flow in risers by feedback linearization 9th IFAC Symposium on Nonlinear Control Systems (NOLCOS), Toulouse, France, September 4-6, 2013, pp. 301-306. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670 (2013)
289. Igor Dejanovic, Ivar J. Halvorsen, Sigurd Skogestad, Helmut Jansen, Zarko Olujić “Cost-effective design of energy efficient four-product dividing wall columns”, , 16th Conference Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction (PRES'13), Rhodes, Greece, Sep-Oct. 2013. In: *Chemical Engineering Transactions (AIDIC Italy)*, Guest Editors: Petar Varbanov, Jiremes, Panos Seferlis, Athanasios I. Papadopoulos, Spyros Voutetakis. **35**, 283-288 (2013) ISBN 978-88-95608-26-6; ISSN 1974-979
290. Jahanshahi, Esmail; Skogestad, Sigurd, Comparison between Nonlinear Model-Based Controllers and Gain-Scheduling Internal Model Control Based on Identified Model, 52nd IEEE Conference on Decision and Control (CDC). 10-13 Dec. 2013. Florence, Italy, pp. 853-860. ISBN 978-1-4673-5716-6/13. ISSN 0191-2216
291. Minasidis, Vladimiro; Jhke, Johannes; Skogestad, Sigurd, Economic Plantwide Control: Automated Controlled Variable Selection for a Reactor-Separator-Recycle Process, Preprints of the *10th IFAC International Symposium on Dynamics and Control of Process Systems (DYCOPS)*, Mumbai, India, Dec. 2013, pp. 87-92. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670 (2013)
292. Jahanshahi, Esmail; Skogestad, Sigurd , Closed-Loop Model Identification and PID/PI Tuning for Robust Anti-Slug Control, Preprints of the *10th IFAC International Symposium on Dynamics and Control of Process Systems (DYCOPS)*, Mumbai, India, Dec. 2013, pp. 233-240. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670 (2013)
293. Grimholt, Chriss; Skogestad, Sigurd , Optimal PID-Control on First Order Plus Time Delay Systems & Verification of the SIMC Rules , Preprints of the *10th IFAC International Symposium on Dynamics and Control of Process Systems (DYCOPS)*, Mumbai, India, Dec. 2013, pp. 265-270. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670 (2013)
294. Maryam Ghadrđan, Ivar J. Halvorsen, Sigurd Skogestad, Dynamic compensation of static estimators from Loss method, Preprints of the *10th*

*IFAC International Symposium on Dynamics and Control of Process Systems (DYCOPS)*, Mumbai, India, Dec. 2013, pp. 403-408. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670 (2013)

295. Jhke, Johannes; Skogestad, Sigurd, Using Process Data for Finding Self-Optimizing Controlled Variables, Preprints of the *10th IFAC International Symposium on Dynamics and Control of Process Systems (DYCOPS)*, Mumbai, India, Dec. 2013, pp. 451-456. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670 (2013)
296. de Oliveira, Vinicius; Jhke, Johannes; Skogestad, Sigurd, Dynamic On-line Optimization of a House Heating System in a Fluctuating Energy Price Scenario, Preprints of the *10th IFAC International Symposium on Dynamics and Control of Process Systems (DYCOPS)*, Mumbai, India, Dec. 2013, pp. 463-468. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670 (2013)
297. Q. K. Le, I. Halvorsen, O. Pajalic, S. Skogestad Dividing wall columns for heterogeneous azeotropic distillation Proceedings 10th International conference on Symposium Distillation and Absorption, Friedrichshafen, Germany, 14-17 September 2014, pp. 576-581, EFCE event no. 705. Published by Dechema-VDI.
298. I. Halvorsen, I. Dejanovic, Z. Olujic, K.A. Marark, S. Skogestad, Dividing wall columns for NGL fractionation Proceedings 10th International conference on Symposium Distillation and Absorption, Friedrichshafen, Germany, 14-17 September 2014, pp. 749-754, EFCE event no. 705. Published by Dechema-VDI.
299. Jahanshahi, Esmail; de Oliveira, Vinicius; Grimholt, Chriss; Skogestad, Sigurd A Comparison between Internal Model Control, Optimal PIDF and Robust Controllers for Unstable Flow in Risers Preprints of the *19th World Congress of the International Federation of Automatic Control*, Cape town, South Africa, Aug. 2014 pp. 5752-5759. International Federation of Automatic Control. IFAC-PapersOnLine, ISSN 1474-6670 (2014)

### **Papers by coworkers (listed here for completeness)**

- K. Havre, K.O. Stornes and H. Stray. "Taming slug flow in pipelines", *ABB Review*, 4/2000. pp. 55-63.
- H. Manum and C. Scali, "Closed Loop Performance Monitoring: Automatic Diagnosis of Valve Stiction by means of a Technique based on Shape Analysis Formalism", *Symposium ANIPLA Methodologies for Emerging Technologies in Automation*, Rome, Nov. 2006. Paper (8 pages).

## Patents

- Pipeline-riser system and method of operating the same: Subsea solution for anti-slug control at offshore oilfields. Europe Patent 13174514.3 - 1605 (Issued to Siemens July 1, 2013). Inventors: Sigurd Skogestad, Esmail Jahanshahi.
- Method of operating a pipeline-riser system: Closed-loop model identification and PID/PI tuning for robust anti-slug control. Europe Patent 13174513.5 - 1605 (Issued to Siemens July 1, 2013) Inventors: Esmail Jahanshahi, Sigurd Skogestad
- Parallel Heat Exchanger Control. Europe Patent Application EU/UK Patent PCT/EP2013/059304 and GB1207770.7 Filed June 3, 2013. Inventors: Johannes Jaeschke, Sigurd Skogestad
- Anti-slug optimization, Filed about 2015. Inventors: Vinicius de Oliveira, Johannes Jaeschke, Sigurd Skogestad
- Equipment for processing of a product resulting from a caprolactone production . Patent approved 2019. Inventors: Oleg pajalic (Perstorp), John Berggren, Sigurd Skogestad, Quang-Khoa Le.

## Other lectures (without printed paper)

1. S. Skogestad, "Understanding the dynamic behavior of distillation columns", Seminar at the Department of Chemical Engineering, University of California at Santa Barbara (UCSB), 11 Feb. 1987.
2. S. Skogestad, "Robust control of distillation columns", Chemical Engineering Departmental Seminar, University of Maryland, 23 June 1987.
3. S. Skogestad, "Robust control of distillation columns", Seminar at DuPont Experimental Station, Wilmington, Delaware 24 June 1987.
4. S. Skogestad, "Robust control of distillation columns", Seminar at Shell research Center, Houston, Texas, 25 June 1987.
5. S. Skogestad, "Robust control of distillation columns", Seminar at University of Pisa, Italy, 22 July 1987.
6. S. Skogestad, "Prosessutforming", Presentation at *Kursdagene 1988: Konvertering av naturgass*, NTNU, Trondheim, 06 Jan. 1988, (11 pages + 7 pages Appendix; available from NIF, Oslo).
7. S. Skogestad, "The  $\mu$ -method" and "Control of distillation columns", Invited lectures at Lund University, Sweden, 06-07 Apr 1988
8. S. Skogestad, "Robust control of distillation columns", Seminar at Åbo University, Finland, 08 Dec. 1988.

9. S. Skogestad, "Why and how to publish", Engelsk-kurs, NTNU, 7. June 1989
10. S. Skogestad, "DB-control" and "Use of secondary measurements in distillation", Departmental seminar, Lehigh University, 19 June 1989
11. S. Skogestad, "Destillasjon - En interessant anvendelse av multivariable regulering", Foredrag ved *Servomøtet 1989*, NTNU, 26. October 1989
12. S. Skogestad, "Estimation of process outputs from multiple secondary measurements", Workshop *Control for profit*, University of Newcastle, 30. November 1989
13. S. Skogestad, "Frequency-dependent RGA analysis", Gjesteforelesning ved EE Dep., Caltech, 12. March 1990
14. S. Skogestad, "Statistiske og dynamiske modeller til prosessovervåkning. Myk kontra hard modellering", Foredrag ved *NKS Temadag - Miljø/kjemiometri*, Porsgrunn, 23. March 1990
15. S. Skogestad, "Multiple steady-states in distillation columns", Gjesteforelesning ved DTH, Denmark, 10. May 1990
16. S. Skogestad, "New Insights on Model-Based Estimation and Control", Foredrag ved Air Products, Allentown, 8 Nov. 90.
17. S. Skogestad, "Dynamics, multiple steady states and control of distillation columns", Chem. Eng. Departmental Seminar, Univ. of Maryland, 9 Nov. 90.
18. S. Skogestad, "Satsvise prosesser. Optimalisering, regulering og produksjonsplanlegging - metoder", Foredrag ved Kursdagene 91, NTNU, Jan. 1991
19. S. Skogestad, "Dynamics, multiple steady states and control of distillation columns", Chem. Eng. Departmental Seminar, Univ. of Wisconsin, 15. Feb. 91.
20. S. Skogestad, "Robust Control", Gjesteforelesning ved Sivilingeniør utdannelsen i Telemark (SiT), 22. Apr. 91
21. "Systemer med kompleks dynamikk - destillasjon som et enkelt eksempel", Foredrag NTVA, Trondheim, 24. Apr.91.
22. S. Skogestad, "Dynamics, multiple steady states and control of distillation columns", Chem. Eng. Departmental Seminar, Auburn University, 24. June. 1991.
23. S. Skogestad, "Dynamics, multiple steady states and control of distillation columns", Chem. Eng. Departmental Seminar, Georgia Tech, 25. June. 1991.

24. S. Skogestad, "Dynamics, multiple steady states and control of distillation columns" and "Control of Heat Exchanger Networks", Seminars given at Centre for Process Systems Engineering, Imperial College, London, 15-16. July. 1991.
25. S. Skogestad. "Short Course on Distillation Dynamics and Control" and "Controllability Analysis using Frequency-Dependent Measures for Disturbances and Interactions", Lectures at *Nordisk Destillationsregulering Forskning Workshop*, Trondheim, Aug. 1991.
26. S. Skogestad, "Modelling and Dynamic Simulation for Process Control", , Lecture and lecture notes for seminar on *Modelling and Optimization of Chemical Processes*", NTNU, Trondheim, Aug. 1991.
27. S. Skogestad, "Inconsistency in low-order models of ill-conditioned plant", Seminar given at DTH, Denmark, 16. March 1992.
28. S. Skogestad, "Kurs i destillasjonsregulering", Statoil Mongstad, 19. March 1992.
29. S. Skogestad, "Analyse av regulerbarhet", Lecture at Norsk Forening for Automatisering (NFA) Seminar i "Integrert Prosessdesign", Oslo, 6-7. April 1992.
30. S. Skogestad, "Controllability of integrated process systems - the relation between design and control", Lecture at *Short course on Process design tools and techniques*, Trondheim, 20-21 May 1992.
31. S. Skogestad, "Analysis of multivariable control systems" - 4 lectures held at Norsk Hydro Research Centre, 13-21 July 1992.
32. S. Skogestad, "Controllability measures for disturbance rejection", Lecture at *4th Nordic Process Control Workshop*, Gøteborg, 28 Aug. 1992.
33. S. Skogestad, "Control of heat exchanger networks", Lecture at Edinburgh University, 9 Sept. 1992 and at UMIST, Manchester, 10 Sept. 1992.
34. S. Skogestad, "Controllability measures for disturbance rejection", Lecture held at Leicester University on 11 Sept. 1992.
35. S. Skogestad, "Controllability analysis for unstable plants", Seminar at DTH, Lyngby, Denmark, 9 Oct. 1992.
36. S. Skogestad, "Controllability assessment as a tool for control structure selection", *Invited lecture at IMA Workshop on Control system design for advanced engineering systems: Complexity, uncertainty, information and organization*, Institute for Mathematics and Its Applications, Minneapolis, 13 Oct. 1992.

37. S. Skogestad, "Regulerbarhet av prosesser", Foredrag ved *Kursdagene NTNU'93*, Kurs: "Økonomisk gevinst ved automatisering og drift av prosesser", Trondheim, 7-8. Jan. 1993.
38. S. Skogestad, "Controllability Analysis", Lecture at *European Forum for CAPE Research Workshop*, Trondheim, 9-10. Jan. 1993.
39. S. Skogestad, "Effect of recycle and other sources of positive feedback on the dynamics of chemical processes", Seminar at Centre for Process Systems Engineering, Imperial College, London, 19 July 1993.
40. S. Skogestad, "Dynamics, multiple steady states and control of distillation columns", Seminar at Technische Universität Berlin, 27 Aug. 1993.
41. S. Skogestad, "Effective control of distillation columns using temperature measurements", Lecture at Shell Research Center (KSLA), Amsterdam, 3 sept. 1993.
42. S. Skogestad, "Regulerbarhetsanalyse av prosesser - et middel for bedre prosessdesign", Servo-møtet'93, Norsk Forening for Automatisering,
43. S. Skogestad, "Controllability analysis", Nordic Process Control Workshop, Lyngby, Jan. 94.
44. S. Skogestad, "Plantwide control", Nordic Process Control Workshop, Lyngby, Jan. 94.
45. S. Skogestad, "A systems approach to distillation processes - The rebirth of a research area", Chemical Engineering Departmental seminars, University of California at Berkeley Jan. 23 1995, University of California at Davis Feb. 13 1995, and University of California at Santa Barbara May 9 1995.
46. S. Skogestad, "A systems approach to distillation processes - The rebirth of a research area", Seminar, University of Massachusetts at Amherst, 31 March 1995.
47. S. Skogestad, "Controllability analysis of SISO systems", Seminar, Department of Electrical Engineering, University of California at Berkeley, April 5, 1995.
48. S. Skogestad, "A systems approach to distillation processes - The rebirth of a research area (including our first results on multivessel batch distillation)", *Plenary lecture*, IFAC Symposium DYCORN+95, Helsingor, Denmark, June 8, 1995.
49. S. Skogestad, "Controllability analysis of SISO systems", Seminar, DuPont Experimental Station, Wilmington, Delaware, USA, July 28, 1995.
50. S. Skogestad, "Multivessel batch distillation", Nordic Process Control Workshop, Åland, August 1995.

51. S. Skogestad and K. Havre, "Control strategy selection and partial control", Lecture and poster, European HCM meeting on chemical process control, Imperial College, London, 14-15 September 1995.
52. S. Skogestad and J. Morud, "Analyse av ustabilitet i ammoniakk-reaktorer", Servomøtet 1995, Trondheim, Nov. 1995.
53. S. Skogestad, "Control structure design", Åbo Akademi, Finland, 15 Feb. 1996.
54. S. Skogestad, "Control structure design", Workshop on controllability analysis and plantwide control, DTU, Denmark, 21 May 1996.
55. S. Skogestad, "Selection of feedback variables for optimizing control of Petlyuk columns", Workshop on Petlyuk distillation, NTNU, Trondheim, 9 Sep. 1996.
56. S. Skogestad, "Tutorial introduction to linear model predictive control", Nordic process control Workshop, Wadahl, Norway, 12 Jan 1997.
57. S. Skogestad, "Multivariabel regulering og optimalisering", Norsk Forening for Automatisering (NFA) Årsmøteseminar, Vettre, 17. april 1997.
58. S. Skogestad, "Model based tuning of PID controllers", Norsk Hydro Research Center, Porsgrunn, 04 Aug. 1997.
59. S. Skogestad, "Important issues in process systems engineering using distillation as an example", Seminar, Aristotle University of Thessaloniki, Greece, 29 Sep. 1997.
60. S. Skogestad, "Controllability analysis and control structure design", Seminar, Department of Electrical Engineering, Eindhoven Technical University, Netherlands, 11 Nov. 1997.
61. S. Skogestad, "Introduction to controllability analysis", Taped lecture at Arizona State University, Tempe, 21 Nov. 1997.
62. S. Skogestad, "Controllability analysis and plantwide control", Short-course (4 hours) at Honeywell, Phoenix, 21 Nov. 1998.
63. S. Skogestad, "Plantwide control", Invited talk at Tutzing Symposium, Germany, 11 March 1998.
64. S. Skogestad, "Control structure design and plantwide control - The search for the self-optimizing control structure", Invited talk at 1998 Process Systems Engineering Seminar Series, Imperial College, London, 22 May 1998.
65. S. Skogestad, "Self-optimizing control", Seminar at Automatic Control Department, ETH, Zurich, 15 June 1998.



66. S. Skogestad, "Self-optimizing control", Seminar at Department of Chemical Engineering, DTU, Lyngby, 18 June 1998.
67. S. Skogestad, "Self-optimizing control", Seminar at Department of Automatic Control, Aalborg University, 11 February 1999.
68. S. Skogestad, "Self-optimizing control", Presentation at CAPE-OPEN workshop, Toulouse, 15 June 1999 [5 handwritten transparencies].
69. S. Skogestad, "Plantwide control: The search for the self-optimizing control structure", Seminar at University of Amsterdam, 29 March 2000.
70. S. Skogestad, "Multivessel batch distillation - Experimental verification", Seminar at University of Essen, 14 June 1999.
71. S. Skogestad, "Controllability analysis and plantwide control", Talk at short-course, Trondheim, 11-12 Oct. 1999.
72. S. Skogestad, "Plantwide control: The search for the self-optimizing control structure", . Seminar at Univ. of Amsterdam, Netherlands, 29 March 2000.
73. S. Skogestad, "Plantwide control: The search for the self-optimizing control structure", . Seminar at Dow Co., Terneuzen, Netherlands, 30 March 2000.
74. S. Skogestad, "Feedback: The forgotten trick", Control group seminar, T.U. Delft, Netherlands, 11 Dec. 2000.
75. S. Skogestad, "Plantwide process control", One-day lecture series given for the Taiwanese PSE Group at National Taiwan University of Science and Technology (NTUST), Taipei, Taiwan, 12 March 2001.
76. S. Skogestad, "Feedback: The forgotten trick", Seminar at ITRI (Ind. Tech. Res. Inst.), Hsin Chu, Taiwan, 13 March 2001.
77. S. Skogestad, "Feedback: The forgotten trick", Seminar at ABB Corporate research, Billingstad, Norway, 30 March 2001.
78. S. Skogestad, "Flowsheet controllability assessment tools", Lecture at Eureka/Cache Workshop on Integration of design and control, , DTU, Lyngby, Denmark, June 2001.
79. S. Skogestad, "Feedback: The forgotten trick", Seminar at University of California, Los Angeles, 20 Nov. 2001.
80. S. Skogestad, "Feedback: The forgotten trick", , Dept. seminar at University of Colorado, Boulder, 12 Feb. 2002.
81. S. Skogestad, "Feedback: The forgotten trick", Dept. seminar at University of Texas, Austin, 14 Feb. 2002.

82. Sigurd Skogestad, "Plantwide control: Towards a systematic procedure" , Plenary lecture at European Symposium on Computer Aided Process Engineering 12, den Haag, Netherlands, 26-29 May 2002, and also presented at PROST Annual Meeting, Trondheim, 11 June 2002.
83. S. Skogestad, "Feedback control theory: An overview and connections to biochemical systems theory", , Invited lecture at VIIth International Symposium on Biochemical Systems Theory Avery, Norway, 17-20 June 2002
84. The Page Buckley Colloquia in process dynamics and control, DuPont, Wilmington, 08 Nov. 2002, "Plantwide control: What should we control?"
85. PSE-seminar at Cranfield University, 01 Sep. 2003, "A low-dimensional model of severe slugging for control design and analysis"
86. Servomtøt, 23. okt. 2003, "Trends in process control"
87. 05 Jan 2004, South China University of Technology, Guangzhou, China, "Feedback: Applications to self-optimizing control and stabilization of slugging"
88. 27 April 2004, IEEE Advanced Process Control Workshop, Vancouver, Canada. 3 hours plenary on "Control structure design".
89. 29 April 2004, University of Alberta, Edmonton, Canada. Department of Chemical Engineering Seminar, "Feedback control: The simple and best solution".
90. 07 December 2004, Saudi-Arabian Section of AIChE Dinner Meeting, Dhahran, "Feedback control: The simple and best solution".
91. 04-08 December 2004, Saudi Aramco / King Fahd University of Petroleum and Minerals (KFUPM), "5-day course on Distillation column control" (with Dr. Mohammad Al-Arfaj).
92. 02 August 2005, Technical University Berlin, "1-day course on distillation column dynamics and control".
93. 24-30 August 2005, Chulalongkorn University, Bangkok, "5-day course on plantwide control".
94. 16-17 November 2005, Statoil Mongstad, "2-day course on Distillation column control".
95. 03-07 December 2005, Saudi Aramco / King Fahd University of Petroleum and Minerals (KFUPM), "5-day course on Distillation column control" (with Dr. Mohammad Al-Arfaj).
96. 04 December 2005, Saudi-Arabian Section of AIChE Dinner Meeting, Dhahran, "Distillation: So simple and yet so complex".

97. 09 February 2006, Invited Web-CAST lecture (American Institute of Chemical Engineers' Division for Computing and Systems Technology), "Feedback: the simple and best solution".
98. 06 March 2006, University of Witswatersrand, Johannesburg, South Africa. Seminar at Department of Chemical Engineering. "Feedback: the simple and best solution".
99. 01 April 2006, Porto Alegre, Brazil. One-day course on "Plantwide control" as part of Adchem'06 conference.
100. 14 July 2006, University of Stuttgart, Germany. Kolloquium Technische Kybernetik, "Feedback: the simple and best solution. Applications to self-optimizing control and stabilization of new operating regimes".
101. 2007, 2008, some missing here..
102. 23 Jan. 2009, ETH, Zrich. Automatic control colloquium. "Self-optimizing control: Simple implementation of optimal operation".
103. 22 May 2009, Shanghai Juatong University, Automatic Control Department. "Feedback: Still the simplest and best solution".
104. 04 June 2009, CTH (Chalmers), Gteborg, Sweden. Automatic control Department. "Self-optimizing control: Simple implementation of optimal operation".
105. 21 Oct. 2009, Servomt, Trondheim. "Selv-optimaliserende og andre eksplisitte metoder for on-line optimalisering".
106. 02 Nov 2009, Statoil Research Center, Trondheim. "Feedback: Still the simplest and best solution".
107. 08 Feb 2010, Control seminar at Techinal University Eindhoven, Netherlands. "Self-optimizing and explicit methods for online optimizing control: Effective Implementation of optimal operation using Off-Line Computations".
108. 10 Feb 2010, Slovak Control Conference, Visna Boca, "Feedback: Still the simplest and best solution".
109. 17 Feb 2010, Control seminar at Aalborg University, Denmark. "Practical implementation of optimal operation".
110. 18 Feb 2010, IFEA workshop on "Overordnet regulering og prosessoptimalisering, Majorstua, Oslo. "Fremtidige trender innen prosessoptimalisering".
111. 01 Mar 2010, IEEE seminar Nanyang Technical University (NTU), Singapore. "A systematic approach to plantwide control".

112. 03 Mar 2010, IEEE seminar National University Singapore (NUS). "Self-optimizing and explicit methods for online optimizing control."
113. 05 Mar 2010, Seminar Nanyang Technical University (NTU), Singapore. "Feedback: Still the simplest and best solution".
114. 09 Mar 2010, Seminar University Technology Petronas (UTP), Ipoh, Malaysia. "A systematic approach to plantwide control".
115. 22 Mar 2010, Seminar University of Sao Paulo (USP), Brazil. "A systematic approach to plantwide control".
116. 23 Mar 2010, Seminar Petrobras REVAP refinery, Sao Jose dos Campos, Brazil. "A systematic approach to plantwide control" (brief version).
117. 26 Mar 2010, Seminar COPPE/UFRJ, Rio, Brazil. "A systematic approach to plantwide control".
118. 21 Apr 2010, Seminar PIC-LU meeting, Stockholm. "A systematic approach to plantwide control".
119. 08 Nov 2010, Seminar STUBA, Bratislava. "Controlled variable and measurement selection".
120. 19 Nov 2010, Seminar EPFL, Lausanne. "Self-optimizing control."
121. 30 Nov 2010, Seminar IIT Kanpur, India, "A systematic approach to plantwide control".
122. 04 Dec 2010, Seminar IIT Madras, Chennai, India, "A systematic approach to plantwide control".
123. 23 Mar 2011, Departemental Seminar DTU, Lyngby, Denmark. "A systematic approach to plantwide control".
124. 15 Apr 2011, Seminar FMC Kongsberg Subsea, Asker. "PID tuning"
125. 20-21 July 2011, Short course Angra dos Reis, Brazil, "Plantwide control"
126. 18 Aug 2011, Summer school TU Berlin, "Distillation column dynamics and control"
127. 28 Oct 2011, Invited plenary talk at ICCAS, Seoul. "A systematic approach to plantwide control".
128. 31 Jan 2012, Motivation seminar Chemikerforeningen, Trondheim. "Selvoptimaliserende regulering"
129. 17-20 Apr 2012, Lectures at Univ. Valledolid, Spain., "Economic plantwide control".

130. 27 May 2012, Seminar at UNAM, Mexico City. "Economic plantwide control".
131. 01 May 2012, Invited plenary talk at AMIDIQ, San Jose del Cabo, Mexico. "Economic plantwide control".
132. 03 May 2012, Lecture at panel discussion AMIDIQ, San Jose del Cabo, Mexico. "Process control education".
133. 23 May 2012, Lecture at Workshop for EFCHE Working Party on Fluid Separations, Bergen, Norway. "New results for divided wall columns".
134. 06-07 Jan. 2013, Short-course on "Economic plantwide control". Sharif University, Tehran, Iran.
135. 09 Jan. 2013, Seminar at Shiraz University, Shiraz, Iran. "Economic plantwide control".
136. 29 May 2013, Invited lecture at Process Industry Centre (PIC) conference in Stockholm, Sweden. "From process control to business control".
137. Some missing here
138. "Optimality of PID control for process control applications", Invited plenary lecture at the 5th International Symposium on Advanced Control of Industrial Processes (ADCONIP 2014), Hiroshima, Japan, May 2014.
139. 03 June 2015. Invited keynote semiplenary at PSE-ESCAPE in Copenhagen.
140. 01 August 2015, Invited plenary talk at Chinese Process Control Conference, Nanchang, China. "Economic plantwide control".
141. 02 Dec. 2015, Invited lecture at ETH, Zurich (ICB series): "Devising control structures for complete chemical plants - From art to science"
142. 11 Apr. 2016, One-Day short course on Plantwide control. Technion, Israel
143. 20 June 2016. Invited talk on plantwide control at FIPSE-3 (Georgakis) Rhodos, Greece.
144. 19 Jan. 2017. Invited talk at DNVA, Oslo (The Norwegian Academy of Science and Letters) on "self-optimizing control".
145. 09-10 February 2017. Invited talks (PID and plantwide) at "XV Simposio CEA de Ingeniere Control: Control Total de Planta", University of Salamanca, Spain.
146. 29 May 2017. Invited plenary on plantwide control at AdCONIP 2017 (6th International Symposium on Advanced Control of Industrial Processes), Tapei, Taiwan.

147. 07 June 2017. Invited plenary on plantwide control at the 21st International Conference on Process Control, Strbskeso, High Tatras, Slovak Republic.