## Short curriculum vitae – Sigurd Skogestad (Sep. 2024)

**Role in the project** Project manager ​​☒​     Project partner ​☐

**Personal information**

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| First name, Surname: | Sigurd Skogestad | | |
| Position | Professor  Norwegian University of Science and Technology | | |
| Date of birth: | 14-08-1955 | Sex: | Male |
| Nationality: | Norwegian | | |
| Researcher unique identifier(s)  (ORCID, ResearcherID, etc.): | ORCID: 0000-0001-6187-8261 Reseatcherid: c-1449-2008 | | |
| URL for personal website: | https://folk.ntnu.no/skoge/ | | |

**Education**

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| Year | Faculty/department - University/institution - Country |
| *1987* | Ph.D. in Chemical and Biological Engineering, California Institute of Technology, USA |
| 1978 | Master (siv.ing.) in Chemical Engineering, NTNU (former NTH), Trondheim. Norway |

**Positions - current and previous**

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| Year | Job title – Employer - Country |
| 1987- Current | Professor in Chemical Engineering, NTNU, Trondheim, Norway |
| 1983-1987 | PhD student and Research Assistant, California Institute of Technology, USA |
| 1980 –1983 | Research Engineer, Norsk Hydro’s Research Center, Porsgrunn, Norway |
| 1979 | Military Service, Norwegian Defence Research Center (FFI) |

**Career breaks - Mobility**

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| Year | Job title – Employer - Country |
| 1994 -1995 | Visiting Professor, Departments of Chemical Engineering and Mechanical Engineering, University of California, Berkeley, USA (12 months). |
| 2001-2002 | Visiting Professor, Departments of Chemical Engineering, University of California, Santa Barbara, USA (5 months). |

**Project management experience**

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| Year | Project owner - Project - Role - Funder |
| 1987 - current | As is clear since I have supervised 47 PhD students to completion and have had many postdocs, I have been involved In a large number of projects over the years, and in most cases as the project manager and principal investigator. Funding has come from the Norwegian Research council (about 60%), NTNU (about 18%), Industry (about 18%) and EU (about 4%). |
| 2015 - 2024 | The by far largest project is the SFI SUBPRO where I was Director for 9 years. This highly successful PhD program had a total finding of 264 million NOK from the Norwegian Research Council (36%), industry (48%) and NTNU (16%). |

**Supervision of students 1987-2024**

(Total number of students supervised to completion as main supervisor)

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| Master students | Ph.D.  students | University/institution - Country |
| 210 | 47 | Department of Chemical Engineering, Norwegian University of Science and Technology (NTNU), Trondheim, Norway |

**Other relevant professional experiences**

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| Year | Description - Role |
| 1994-1998 | Chair of the University committee for all engineering PhDs at NTNU |
| 1994-1998 | Founding chair of the Nordic Process Control Working group (and still a member) |
| 1994-2018 | Head of NTNU/SINTEF's strong point center in process systems engineering (PROST) |
| 1987-present | Member of numerous editorial boards and IPCs for conferences, including Editor of Automatica 1996-2002, IPC Chair for the PSE-ESCAPE conference in Trondheim (1996), NOC chair for the IFAC DYCOPS conference in Trondheim (2016), IPC Chair for the IFAC conference on Automatic control in offshore oil and gas production, Denmark (2018). |
| 1999-2009 | Head of Department of Chemical Engineering, NTNU |
| 2019 – Current | Study Director for the 5-year Master (siv.ing.) program in Chemical and Biochemical Engineering at NTNU (about 100 new students per year). |

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| **Fellowships and awards** |
| ***1979*** *Instilling* awarded for the *Siv.ing* degree (result communicated to the Norwegian King)  ***1983***Fullbright Fellowship (travel grant) awarded for graduate studies at Caltech  ***1983*** *Utdanningsstipend* awarded from Univ. of Trondheim for graduate studies at Caltech  ***1989*** *Ted Peterson Best Paper Award* by the CAST division of AIChE (The American Institute of  Chemical Engineers)  ***1990*** *George S. Axelby Outstanding Paper Award* by the Control System Society of IEEE (The  Institute of Electrical and Electronic Engineers)   1. *Hugo Schuck Best Paper Award* by the American Automatic Control Council 2. *Best t paper award* for paper published in 2004 in *Computers and chemical engineering* 3. *Best paper award at the ESCAPE 2019 Symposium (Eindhoven, June 2019)*   ***2019*** *Computing in chemical engineering award from the American Institute of Chemical Engineers (Orlando, 12 Nov. 2019)* |

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| **Membership of scientific societies** |
| *1988* Elected Member to the Norwegian Academy of Tehnical Sciences (NTVA)  *1991* Elected member to Det Kongelige Norske Vitenskapers Selskab  *2008-2014* Member of IFAC Technical Board  *2011* Elected member of Process Automation Hall of Fame, Delaware, USA  *2012* Elected Fellow of American Institute of Chemical Engineers (AIChE)  *2014* Elected Fellow of International Federation of Automatic Control (IFAC)  *2015* Elected member to *The Norwegian Academy of Science and Letters*, Oslo  *2015* Honorary member of *Norwegian Society of Automatic Control* |

**Track record**

* I have published about 230 international journal publications and 330 conference publications
* H-index (Web of Science): 54 (2024).
* H-index (Google scholar): 76 (2024)
* Author of 2 international text books. (1) S. Skogestad and I. Postlethwaite, ``Multivariable feedback control -analysis and design,'' Wiley (1996); 2nd Edition (2005). (2) S. Skogestad, ``Chemical and energy process engineering'', CRC Press (2009).
* No. of citations to book Multivariable feedback control: 12161 (Google scholar, 2024)

**Recent 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. Primal-dual 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. Model Predictive Control for Bottleneck Isolation with Unmeasured Faults EM Turan, S Skogestad, J Jaschke.IFAC Adchem conference, 2024

**2023**

1. The theoretical basis of ratio control S Skogestad 2023 AIChE Annual Meeting 1 2023
2. 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
3. Home Energy Management with Dynamic Tariffs and Tiered Peak Power Charges D P�rez-Pi�eiro, S Skogestad, S Boyd arXiv preprint arXiv:2307.07580 2023
4. Transformed inputs for linearization, decoupling and feedforward control S Skogestad, C Zotica, N Alsop. Journal of process Control 122, 113-133 13 2023
5. Advanced control using decomposition and simple elements S Skogestad Annual Reviews in Control 56, 100903 24 2023
6. 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
7. Decentralized control for optimal operation under changing active constraints LF Bernardino, S Skogestad Computer Aided Chemical Engineering 52, 1699-1704 2023

**2022**

1. 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
2. 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
3. Real-time optimization as a feedback control problem, A review. D Krishnamoorthy, S Skogestad Computers & Chemical Engineering 161, 107723 45 2022
4. Bidirectional inventory control with optimal use of intermediate storage C Zotica, K Forsman, S Skogestad Computers & Chemical Engineering 159, 107677 7 2022
5. 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
6. Online Feedback-based Optimization with Multi-input Direct Constraint Control R Dirza, S Skogestad IFAC-PapersOnLine 55 (7), 149-154 2 2022
7. Control of steam bottoming cycles using nonlinear input and output transformations for feedforward disturbance rejection C Zotica, RM Montanes, A Reyes-Lua, S Skogestad IFAC-PapersOnLine 55 (7), 969-974 8\* 2022
8. Comparison of simple feedback control structures for constrained optimal operation LF Bernardino, D Krishnamoorthy, S Skogestad IFAC-PapersOnLine 55 (7), 883-888 4 2022
9. 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
10. Soft Sensor of Key Components in Recirculating Aquaculture Systems, using Feedforward Networks AM dos Santosa, E Karlsen, S Skogestad, KJK Attramadal Computer Aided Chemical Engineering 51, 1495-1500 2022
11. Systematic Pairing Selection for Economic-oriented Constraint Control R Dirza, S Skogestad Computer Aided Chemical Engineering 51, 1249-1254 2 2022
12. 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
13. Primal-dual feedback-optimizing control with direct constraint control R Dirza, D Krishnamoorthy, S Skogestad Computer Aided Chemical Engineering 49, 1153-1158 3 2022