PROST

Process Systems Engineering Trondheim
NTNU - SINTEF

The strong point center in process systems engineering (PROST) involves more than 50 persons. This includes six professors with about 30 Ph.D. students from the departments of Chemical Engineering, Thermal Energy and Hydro Power, Engineering Cybernetics, and the associated SINTEF research groups in Chemical Engineering and Automatic Control. The main research areas are:

- Process modeling
- Process simulation and optimization (static and dynamic)
- Process control
- Process synthesis
- Process operations

PROST was established in June 1994. It was awarded status as a strong point center by the Norwegian University of Science and Technology (NTNU) and SINTEF in recognition of the strong international standing of the group. The center receives about half a million NOK annually from our industrial members.

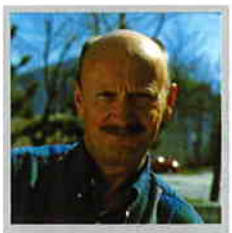
NTNU
Norwegian University of
Science and Technology

SINTEF

Member groups of PROST:

Professor
Sigurd Skogestad
(Head of PROST)

Process control group , NTNU
(Dept. of Chemical Engineering)
Main reseach areas:
- Controllability of processes (achievable control performance)
- Plantwide control, dynamics and optimization
- Design and control of distillation processes (continous and batch)



Professor
Terje Hertzberg

Process modeling group, NTNU
(Dept. of Chemical Engineering)
Main research areas:
- Numerical methods and strategies in dynamic process simulation and otimization
- Computer aided process modeling
- Process model validation and estimation of statistical uncertainty in process simulations

Professor II
Kristian Lien

Process synthesis and optimization group, NTNU
(Dept. of Chemical Engineering),
Main research areas:
- Conceptual design and optimization of processes
- Multifunctional process units (reactive distillation, membrane reactors)
- Operation of process systems

Professor
Truls Gundersen

Process integration group, NTNU
(Dept. of Thermal Energy and Hydro Power)
Main research areas:
- Optimal design and operation of heat exchanger networks
- Use of optimization methods in process integration and design
- Energy and water management of integrated processes

Process cybernetics group, NTNU
(Dept. of Engineering Cybernetics)
Main research areas in process systems engineering:

- Modeling and modeling methods
- Identification
- Model-based control
- Optimization-based process control and industrial applications
- Plant operation

Professor
Bjarne Foss

Process cybernetics group, NTNU
(Dept. of Engineering Cybernetics)
Main research areas:

- Control structure design
- Model predictive control
- Interactions between design and control of processes
- Controller performance monitoring and diagnosis

Professor
Morten Hovd

Department of Chemical Engineering, SINTEF Applied Chemistry
Main research areas in process systems engineering:

- Process modelling and simulation
- Process evaluation and concept studies
- Empirical modelling and estimation

In addition to the process system engineering activities, the department has important activities within reactor and separation technologies.

Research manager
Ole Wærnes

Department of Automatic Control, SINTEF Electronics and Cybernetics
Main research areas in process systems engineering:

- Tools for identification and controller tuning
- Industrial applications of process control
- Modelling and development of dynamic simulators

In addition, the department has activities in other aspects of control systems, including motion control, operator support systems, architectures and methodology for distributed control systems, and reliability of control systems.

Research director
Sture Holmstrøm

For more information about the center contact:

PROST
Department of Chemical Engineering
Norwegian University of Science and Technology (NTNU)
N-7491 Trondheim
Norway

Professor Sigurd Skogestad
Phone: +47-735-94154
Fax: +47-735-94080
email: skoge@chembio.ntnu.no

Professor Terje Hertzberg
Phone: +47-735-94113
Fax: +47-735-94080
email: thz@chembio.ntnu.no

Professor II Kristian Lien
Phone: +47-72 89 61 27
Fax: +47-72 89 61 01
email: Kristian.Lien@energos.no

Professor Truls Gundersen
Phone: +47-735-93721
Fax: +47-735-98390
email: Truls.Gundersen@tev.ntnu.no

Professor Bjarne Foss
Phone: +47-735-94476
Fax: +47-735-94399
email: Bjarne.Foss@itk.ntnu.no

Professor Morten Hovd
Phone: +47-735-91426
Fax: +47-735-94399
email: Morten.Hovd@itk.ntnu.no

Research manager Ole Wærnes
Phone: +47-735-93159
+47-735-94128 (Research scientist Thor Mejdell)
Fax: +47-735-96995
email: Ole.Warnes@chem.sintef.no

Research director Sture Holmstrøm
Phone: +47-735-94370
+47-735-94387 (Senior scientist Ivar J. Halvorsen)
Fax: +47-735-94399
email: Sture.Holmstroem@ecy.sintef.no

http://kikp.chembio.ntnu.no/research/PROST/

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