



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 by the Norwegian University of Science and Technology (NTNU) and SINTEF in recognition of the strong international standing of the group. The center receives one million NOK annually from NTNU and SINTEF.

## Member groups of PROST:



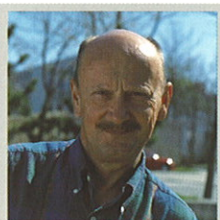
Professor  
Sigurd Skogestad  
(Head of PROST)

### **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 (continuous 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 optimization
- Computer aided process modeling
- Process model validation and estimation of statistical uncertainty in process simulations



Professor  
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

### **Systems Engineering group, NTNU**

(Dept. of Thermal Energy and Hydro Power)

Main research areas:

- Systems Engineering methodology for system life cycle design, modeling and simulation
- Life Cycle Assessment (LCA) as related to Systems Engineering, conservation, recycling, cleaner production
- Stochastic modeling and simulation for life cycle scenario assessment of reliability, availability, productivity, profitability, etc.
- Modeling, simulation and optimization of thermal processes



Professor  
Odd Andreas  
Asbjørnsen

### **Department of Chemical Engineering, SINTEF Applied Chemistry**

Main research areas in process systems engineering:

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

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



Research manager  
Arne Grislingås

### **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
- Modeling 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 manager  
Peter Singstad

## For more information about the center contact:

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mot felles mål !