

SINEM ERTUNÇ

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Education

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| 2001 - 2004 | MS in Chemical Engineering, Illinois Institute of Technology, Chicago, IL <ul style="list-style-type: none"> • GPA: 3.9/4.0. • Dissertation: “Multivariate Statistical Monitoring of Cascaded Batch Fermentation Process Operation”. |
| 1997 - 2001 | BS in Chemical Engineering, Middle East Technical University, Ankara, Turkey <ul style="list-style-type: none"> • GPA: 3.1/4.0. |

Experience

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| 2001 - 2004 | Research Assistant
Department of Chemical and Environmental Engineering
Illinois Institute of Technology, Chicago, IL <ul style="list-style-type: none"> • Developed statistical process monitoring (SPM) and quality control (QC) tools/software for batch data analysis, online monitoring and quality prediction, SPC and QC studies in joint projects with pharmaceutical and polymer industries. • Improved an existing cascaded penicillin fermentation simulator in Matlab. |
| Summer 1999 | Summer Internship
Petkim Petrochemical Co.
Izmir, Turkey <ul style="list-style-type: none"> • Assisted automation engineers in process control and monitoring. • Became familiar with plant operations in Ethylene Plant and Polyvinyl Chloride (PVC) Plant. • Walked down and red-lined P&ID's. • Observed the Waste Treatment and Water Pretreatment Units of the Petrochemical Complex. |

Technical Skills

General skills in statistics and computing. Specific expertise and interests in:

- Statistics: empirical modeling, multivariate statistical analysis, batch process monitoring and fault diagnosis.
- Computing platforms: Windows 2000/NT/XP.
- Programming languages: Matlab, G2 and FORTRAN.
- Statistical software: Matlab Statistics, Chemometrics and PLS Toolboxes.
- Text formatting and office computing: LaTeX, MS Office, Illustrator, GoLive.

Professional Memberships

- American Institute of Chemical Engineering (AIChE).
- Middle East Technical University Process Club.

Publications

Journal Articles:

- C. Undey, S. Ertunc, E. Tatara, F. Teymour and A. Cinar, "Batch Process Monitoring and Diagnosis: Application to Polymerization Systems, Macromolecular Symposia, 206(1), 121-134, 2004.
- C. Undey, S. Ertunc and A. Cinar, "Online Batch/Fed-batch Process Performance Monitoring, Quality Prediction and Variable Contributions Analysis for Diagnosis", Industrial and Engineering Chemistry Research, 42(20), 4645-4658, 2003.

Presentations in Meetings:

- C. Undey, S. Ertunc, E. Tatara, F. Teymour and A. Cinar, "Batch Process Monitoring and Diagnosis: Applications to Polymerization Systems", Polymer Reaction Engineering V, Quebec City, Canada, May 18-23, 2003.
- C. Undey, S. Ertunc, E. Tatara and A. Cinar, "Real-time Fault Detection, Diagnosis, and Quality Prediction in Batch Fermentations", 225th ACS National Meeting, New Orleans, LA, March 23-27, 2003.
- S. Ertunc, C. Undey and A. Cinar, "Online Batch Process Monitoring and Quality Prediction-Enhancements by Preserving Variable Direction and Charting Contributions", AIChE Annual Meeting (Paper 263b), Indianapolis, IN, November 3-8, 2002.
- C. Undey, S. Ertunc and A. Cinar, "An Integrated Framework for Online Monitoring and Quality Prediction in Real-time for Batch Fermentation Processes", AIChE Annual Meeting (Paper 270d), Indianapolis, IN, November 3-8, 2002.