

## MUSTAFA TEKIN DOKUCU

<b>Objective</b>	Attaining a challenging position that involves research about systems engineering including modeling, optimization, and control of chemical processes		
<b>Personal Information</b>	Address	Department of Chemical Engineering University of California Santa Barbara Santa Barbara, CA 93106	
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<b>Education</b>	2002-present	Ph.D.	Department of Chemical Engineering, University of California Santa Barbara, Santa Barbara, CA Thesis: "Control of Distributions in an Emulsion Polymerization Reactor" Advisor: Professor Francis J. Doyle III
	1999-2002	M.Sc.	Department of Chemical Engineering, Middle East Technical University, Ankara, Turkey Thesis: "Model Predictive Controller Design for an Industrial Distillation Column" Advisor: Professor Canan Ozgen
	1995-1999	B.Sc.	Department of Chemical Engineering, Middle East Technical University, Ankara, Turkey
<b>Research Experience</b>	Research Assistant University of California Santa Barbara, CA	<ul style="list-style-type: none"> <li>• Control of the endpoint particle size distribution in semibatch emulsion copolymerization by trajectory tracking strategies</li> <li>• Model order reduction with statistical methods for the model based control of emulsion polymerization systems</li> <li>• Development of a first principles model for the molecular weight distribution in an emulsion polymerization reactor</li> <li>• Design of a multi-rate estimator based model predictive controller for emulsion polymerization</li> </ul>	
	Research Assistant Middle East Technical University Ankara, Turkey	<ul style="list-style-type: none"> <li>• Design of a multivariable model predictive controller for an industrial distillation column</li> <li>• First-principles based modeling of an industrial distillation column</li> <li>• Development of a fuzzy-logic based adaptive tuning algorithm for model predictive controllers</li> </ul>	
<b>Publications</b>	<ul style="list-style-type: none"> <li>• M. T. Dokucu, M.-J. Park, and F. J. Doyle III, "Reduced-Order Methodologies for Feedback Control of Particle Size Distribution in Semibatch Emulsion Copolymerization", submitted to <i>Chem. Eng. Sci.</i></li> <li>• M. T. Dokucu, M.-J. Park, and F. J. Doyle III, "Multi-Rate Model Predictive Control of Particle Size Distribution in a Semibatch Emulsion Copolymerization Reactor", submitted to <i>J. Process Control</i>.</li> <li>• M.-J. Park, M. T. Dokucu, and F. J. Doyle III, "Modeling and Sensitivity Analysis of Particle Size Distribution and Chain-Length Distribution in a Semibatch Emulsion Copolymerization Reactor", <i>Macromol. Theory Simul.</i>, <b>14</b>, 474-490 (2005).</li> <li>• M.-J. Park, M. T. Dokucu, and F. J. Doyle III, "Regulation of Emulsion PSD to an Optimal Trajectory Using PLS Model-Based Predictive Control", <i>Ind. Eng. Chem. Res.</i>, <b>43</b>, 7227-7237 (2004).</li> </ul>		

<b>Conference Proceedings (* denotes speaker)</b>	<ul style="list-style-type: none"> <li>• M.-J. Park*, M. T. Dokucu, and F. J. Doyle III, "On-Line Particle Size Distribution Control Strategy in an Emulsion Copolymerization Reactor", <i>Dynamics and Control of Process Systems DYCOPS 7</i>, Cambridge, Massachusetts, 2004.</li> <li>• M.-J. Park, M. T. Dokucu, and F. J. Doyle III*, "Regulation of Emulsion PSD to Optimal Trajectory Using PLS Model-Based Predictive Control", <i>Polymer Reaction Engineering: Modelling, Optimisation and Control</i>, ESCPE-Lyon, Villeurbanne, France, 2003.</li> <li>• N. Gunaydin*, M. T. Dokucu, C. Ozgen, "Model Predictive Control of a Cascade System", <i>TOK' 2001 National Conference of Automatic Control</i>, Uludag University, Bursa/Turkey.</li> <li>• U. Halici, K. Leblebicioglu, C. Ozgen, S. Tuncay, M. T. Dokucu*, "Control of a Steam Heated Agitated Tank with Neural Networks", <i>TOK' 2000 National Conference of Automatic Control</i>, Hacettepe University, Ankara/Turkey.</li> </ul>
<b>Presentations (*denotes speaker)</b>	<ul style="list-style-type: none"> <li>• M. T. Dokucu* and F. J. Doyle III, "Control of Particle Size Distribution in an Emulsion Copolymerization Reactor via Cascade Regulation of Nucleation and Growth", <i>AIChE Annual Meeting 2006</i>, San Francisco, California, 2006.</li> <li>• M. T. Dokucu*, M.-J Park and F. J. Doyle III, "Modeling and Control of Particle Size Distribution: Application to a Semibatch Emulsion Copolymerization System", <i>Control of Particulate Processes VII</i>, Harrison Hot Springs, British Columbia, 2005.</li> <li>• M. T. Dokucu*, M.-J Park and F. J. Doyle III, "Multi-Rate Model Predictive Control of Particle Size Distribution in an Emulsion Copolymerization Reactor", <i>AIChE Annual Meeting 2005</i>, Cincinnati, Ohio, 2005.</li> <li>• M. T. Dokucu, C. Ozgen*, "Adaptive Model Predictive Control of an Industrial Distillation Column", <i>AIChE Annual Meeting 2002</i>, Indianapolis, Indiana, 2002.</li> </ul>

<b>Teaching Experience</b>	<p>Teaching Assistant, University of California Santa Barbara, Santa Barbara, CA</p> <ul style="list-style-type: none"> <li>• Statistical Methods in Chemical Engineering</li> <li>• Process Control (Laboratory Experiments)</li> <li>• Transport Processes</li> </ul> <p>Teaching Assistant, Middle East Technical University, Ankara, Turkey</p> <ul style="list-style-type: none"> <li>• Process Control</li> <li>• Chemical Engineering Laboratory (Process Control and Phase Equilibria Experiments)</li> <li>• Chemical Process Calculations</li> <li>• Thermodynamics</li> </ul>
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<b>Industrial Experience</b>	<table> <tr> <td>June 2005 – September 2005</td> <td>Summer internship DuPont Process Dynamics and Control Group</td> </tr> <tr> <td></td> <td> <ul style="list-style-type: none"> <li>• Development of an optimization platform for TMODES™</li> <li>• Optimization of a semibatch polymerization reactor for DuPont Performance Coatings</li> </ul> </td> </tr> <tr> <td>July 1998 – August 1998</td> <td>Summer internship DEWILUX paint and varnish industry</td> </tr> </table>	June 2005 – September 2005	Summer internship DuPont Process Dynamics and Control Group		<ul style="list-style-type: none"> <li>• Development of an optimization platform for TMODES™</li> <li>• Optimization of a semibatch polymerization reactor for DuPont Performance Coatings</li> </ul>	July 1998 – August 1998	Summer internship DEWILUX paint and varnish industry
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<b>Computer Skills</b>	<p><i>Languages:</i> Fortran, Java</p> <p><i>Platforms:</i> Windows, UNIX</p> <p><i>Tools:</i> MatLab, Simulink, Honeywell Plantscape, ABB Freelance</p>
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