

SUJIT S. JOGWAR

(Last updated: July 31, 2019)

EDUCATION

- **PhD, Chemical Engineering** 9/2006 - 5/2011
University of Minnesota, Minneapolis, MN, USA. (GPA: 3.97/4.00)
- **Bachelor of Chemical Engineering** 7/2002 - 5/2006
Mumbai University Institute of Chemical Technology, India. (83.45%, Rank #1)

PROFESSIONAL EXPERIENCE

- **Assistant Professor** 12/2016 - Present
Indian Institute of Technology (IIT) Bombay, Powai, Mumbai, India.

Students Guided	Complete	Ongoing
PhD	0	4
Masters	3	1

- **DST INSPIRE Assistant Professor** 9/2013 - 12/2016
Institute of Chemical Technology (ICT), Nathalal Parekh Marg, Matunga, Mumbai, India.

Students Guided	Complete	Ongoing
PhD	1	2
Masters	2	0

- **Development Specialist** 5/2011 - 8/2013
Praxair Technology Center, Tonawanda, NY, USA.
- **R & D Intern** Summer 2010
Praxair Technology Center, Tonawanda, NY, USA.
- **Graduate Research Assistant** 9/2006 - 5/2011
University of Minnesota (UMN), Minneapolis, MN, USA.

TEACHING EXPERIENCE

Course	Role	Location	Time
Chemical Process Control	Instructor	ICT, IITB	Spring 2016, 2014, 2018-19
		NPTEL	Spring 2019
	Training Instructor	BORL	10/2015
		Asian Paints	9/2015
	Recitation Instructor	UMN	Spring 2010
Computational Methods lab	Instructor	IITB	Autumn 2017-19
Piping Engineering	Instructor	IITB	Spring 2019, Summer 2019
Process Design Project	Instructor	IITB	Spring 2017
Chemical Engineering Laboratory	Instructor	ICT	Spring 2014-16, Fall 2014-16
Chemical Engineering Operations	Instructor	ICT	Fall 2015-16
	Training Instructor	Siemens	12/2016
Basics of Distillation	Training Instructor	BORL	9/2015
ASU Distillation Operations	Training Instructor	Praxair	2012-13

EDITORIAL ACTIVITIES

1. Associate Editor for Journal of Process Control (1/2019 - Present)
2. Guest Editor for Processes Special Issue on Design and Control of Sustainable Systems (2019)
3. Reviewer for AIChE Journal (8/2013 - Present)
4. Reviewer for Computers and Chemical Engineering Journal (06/2016 - Present)
5. Reviewer for Industrial and Engineering Chemistry Research Journal (6/2012 - Present)
6. Reviewer for IFAC conferences (5/2013 - Present)

LEADERSHIP EXPERIENCE

1. Volunteer for Vibha (NPO) 3/2008 - 8/2013

AWARDS AND HONORS

1. Smt. Padma Kelkar Endowment Award for Encouragement to New Chemical Engineering Faculty, 2014.
2. DST INSPIRE Faculty Fellowship, 2013-2018.
3. Doctoral Dissertation Fellowship, University of Minnesota, 2010-11.
4. Best Presentation Award in “Control and Optimization of Energy Systems” session at American Control Conference, St. Louis, MO, June 10-12, 2009.
5. Dr. G.P. Kane Gold Medal from Mumbai University, 2006.
6. Indian Institute of Chemical Engineers (IChE) Best Design Project Report Award, 2006.
7. Professor S.B. Pandya Prize (Home Paper), 2006.
8. Manjula Bagmal Parikh Memorial Foundation Prize (B. Chem. Eng.), 2006.
9. G.A. Kulkarni Prize (B. Chem. Eng.), 2006.
10. Gujarat Ambuja Cement Best Home Paper Award for 2005-06.
11. Professor N R Kamath Trophy (Inter-college Chemical Engineering Quiz), 2006.
12. R A Rajadhyaksha Award (Chemical Reaction Engineering), 2005.
13. Gujarat Ambuja Cement Award for first rank in semester II, III, IV, V, VI, VII and VIII, 2003-2006.
14. Ratan Tata Scholarship, 2003-2006.

PUBLICATIONS

Citations: 338, **h-index:** 10, **i10-index:** 10

Journal Papers

1. S. S. Jogwar, M. Baldea and P. Daoutidis, “Dynamics and Control of Process Networks with Large Energy Recycle”, *Ind. Eng. Chem. Res.*, 48(13), 6087–6097, 2009.
2. S. S. Jogwar and P. Daoutidis, “Dynamics and Control of Vapor Recompression Distillation”, *J. Process Contr.*, 19(10), 1737–1750, 2009.
3. S. S. Jogwar, M. Baldea and P. Daoutidis, “Tight Energy Integration: Dynamic Impact and Control Advantages”, *Comput. Chem. Eng.*, 34(9), 1457–1466, 2010.
4. S. S. Jogwar and P. Daoutidis, “Energy Flow Patterns and Control Implications for Integrated Distillation Networks”, *Ind. Eng. Chem. Res.*, 49(17), 8048–8061, 2010.

5. D. Georgis, S. S. Jogwar, A. S. Almansoori and P. Daoutidis, “Design and Control of Energy Integrated Solid Oxide Fuel Cell System for *in-situ* H_2 Production and Power Generation”, *Comput. Chem. Eng.*, 35(9), 1691–1704, 2011.
6. S. S. Jogwar, A. I. Torres and P. Daoutidis, “Networks with Large Solvent Recycle: Dynamics, Hierarchical Control and a Biorefinery Application”, *AIChE J.*, 58(6), 1764–1777, 2012.
7. S. Heo, S. S. Jogwar, S. Rangarajan and P. Daoutidis, “Graph reduction of complex energy integrated networks: Process systems applications”, *AIChE J.*, 60(3), 995–1012, 2014.
8. S. S. Jogwar, S. Rangarajan and P. Daoutidis, “Reduction of Complex Energy Integrated Process Networks Using Graph Theory”, *Comput. Chem. Eng.*, 79, 46–58, 2015.
9. S. S. Jogwar and P. Daoutidis, “Dynamic Characteristics of Energy-Integrated Batch Process Systems: Insights from Two Case Studies”, *Ind. Eng. Chem. Res.*, 54(16), 4326–4336, 2015.
10. P. Daoutidis, M. Zachar and S. S. Jogwar, “Sustainability and Process Control: A survey and perspective”, *J. Process Contr.*, 44, 184–206, 2016 (invited contribution).
11. S. S. Jogwar and P. Daoutidis, “Community-based synthesis of distributed control architectures for integrated process networks”, *Chem. Eng. Sci.*, 172, 434–443, 2017.
12. P. Shahane, C. S. Mathpati and S. S. Jogwar, “Design of mixed energy-integrated batch process networks by pseudo-direct approach”, *AIChE J.*, 64(1), 55–67, 2018.
13. P. Daoutidis, W. Tang and S. S. Jogwar, “Decomposing complex plants for distributed control: perspectives from network theory”, *Comput. Chem. Eng.*, 114, 43–51, 2018.
14. P. Shahane, C. S. Mathpati and S. S. Jogwar, “Robustness analysis of heat-integrated batch process networks”, *Ind. Eng. Chem. Res.*, 58(1), 217–227, 2019.
15. S. S. Jogwar, S. Mete and C. S. Mathpati, “Scheduling of energy-integrated batch process systems using a pattern-based framework”, *Processes*, 7(2), 103, 2019.
16. S. S. Jogwar, “Distributed control architecture synthesis for integrated process networks through maximization of strength of input-output impact”, *J. Process Contr.*, submitted for publication.

Selected Conference Proceedings

1. S. S. Jogwar, M. Baldea and P. Daoutidis, “Dynamics and Control of Reactor-Feed Effluent Heat Exchanger Networks”, American Control Conference, Seattle, WA, USA, (June 11–13, 2008), 1481–1486.
2. S. S. Jogwar and P. Daoutidis, “Vapor Recompression Distillation: Multi-scale Dynamics and Control”, American Control Conference, St. Louis, MO, USA, (June 10–12, 2009), 647–652.
3. S. S. Jogwar and P. Daoutidis, “Multi-scale Dynamics in Counter-current Heat Exchangers”, Mediterranean Conference on Control and Automation, Thessaloniki, Greece, (June 24–26, 2009), 169–174.
4. S. S. Jogwar and P. Daoutidis, “Dynamics and Control of Energy Integrated Distillation Column Networks”, American Control Conference, Baltimore, MD, USA, (June 30–July 2, 2010), 2835–2840.
5. S. S. Jogwar, S. Rangarajan and P. Daoutidis, “Multi-scale Dynamics in Energy-integrated Networks: A Graph Theoretic Analysis”, 18th World Congress of the International Federation of Automatic Control, Milano, Italy, 2011, 6085–6090.
6. D. Georgis, S. S. Jogwar, A. S. Almansoori and P. Daoutidis, “Control of an Energy Integrated Solid Oxide Fuel Cell System”, American Control Conference, San Francisco, CA, USA, (June 29–July 1, 2011), 1518–1523.
7. D. Georgis, S. S. Jogwar, A. S. Almansoori and P. Daoutidis, “Impact of steam reformer on the design and control of an energy integrated solid oxide fuel cell system”, Mediterranean Conference on Control and Automation, Corfu, Greece, (June 20–23, 2011), 576–581.

8. S. Heo, S. S. Jogwar and P. Daoutidis, “Dynamics and control of high duty counter-current heat exchangers”, Mediterranean Conference on Control and Automation, Corfu, Greece, (June 20-23, 2011), 1034–1039.
9. S. Heo, S. Rangarajan, S. S. Jogwar and P. Daoutidis, “Graph Reduction for Hierarchical Control of Energy Integrated Process Networks”, Conference on Decision & Control, Maui, Hawaii, USA, (December 10-13, 2012), 6388–6393.
10. S. S. Jogwar, S. Rangarajan and P. Daoutidis, “Graph-theoretic Analysis of Complex Energy Integrated Networks”, 10th IFAC Conference on Dynamics and Control of Process Systems (DYCOPS), Mumbai, India, (December 18-20, 2013), 117–122.
11. S. S. Jogwar and P. Daoutidis, “Network Level Dynamics in Energy-integrated Batch Process Systems”, 8th International Conference on Foundations of Computer-aided Process Design (FOCAPD), Cle Elum, WA, USA, (July 13-17, 2014), 777-782.
12. S. S. Jogwar and P. Daoutidis, “Optimal Operation of an Energy Integrated Batch Reactor - Feed Effluent Heat Exchanger System”, 9th IFAC International Symposium on Advanced Control of Chemical Processes (ADCHEM), Whistler, Canada, (June 7-10, 2015), 1193-1198.
13. S. S. Jogwar, “Model-based Control of an Energy-integrated Batch Reactor - Feed Effluent Heat Exchanger System in a Campaign Mode”, 9th IFAC Symposium on Control of Power and Energy Systems (CPES), New Delhi, India, (December 9-11, 2015), 209-214.
14. S. Mete and S. S. Jogwar, “A Pattern-based Method for Scheduling of Energy-integrated Batch Process Networks”, 11th IFAC Conference on Dynamics and Control of Process Systems (DYCOPS), Trondheim, Norway, (June 6-8, 2016), 669–674.
15. P. Shahane and S. S. Jogwar, “A Novel Algorithm for Design of Mixed Energy-integrated Batch Process Networks”, 11th IFAC Conference on Dynamics and Control of Process Systems (DYCOPS), Trondheim, Norway, (June 6-8, 2016), 67–72.
16. P. Daoutidis, W. Tang and S. S. Jogwar, “Control architecture design for complex plants: Perspectives from network theory”, 8th International Conference on Chemical Process Control (CPC), Tucson, USA, (Jan 8-12, 2017), accepted for publication.
17. M. Vibhute and S.S. Jogwar, “Model-based Control of Vapor-recompressed Batch Distillation Column”, 10th IFAC International Symposium on Advanced Control of Chemical Processes (ADCHEM), Shenyang, China, 548–553, 2018.
18. S.S. Jogwar and A. Sureka, “Impact of Operating Point Transition Method on the Dynamics and Control of Divided Wall Column”, 21st World Congress of the International Federation of Automatic Control, Berlin, Germany, submitted for publication.

Book Chapters

1. M. Baldea, S. S. Jogwar and P. Daoutidis, “Tight Energy Integration: Easier Control?”, in: M. M. El-Halwagi and A. A. Linninger, “Design for Energy and the Environment”, *CRC Press*, 955-969.

SPONSORED RESEARCH & CONSULTANCY PROJECTS

1. Robust optimal design of energy integrated process systems (ongoing) [IITB]
2. Modeling and control of cold rolling (ongoing) [Honeywell]
3. Design and control of energy-integrated process networks (completed) [DST]
4. Scheduling and optimal control of energy-integrated batch process systems (completed) [DST]
5. Improved utilization of carbide lime sludge (Completed) [DCM Shriram]

6. MPC performance monitoring (Completed) [Praxair]
7. Operator training simulators (Completed) [Praxair]
8. Dynamic agility of air separation plants (Completed) [McMaster University]

MEMBERSHIPS

1. UDCT Alumni Association
2. Automatic Control and Dynamic Optimization Society

WORKSHOPS ORGANIZED

1. UGC-NRC sponsored Faculty Development Program on Chemical Process Control (5/2015)

WORKSHOPS ATTENDED

1. MHRD - TEQIP - KITE sponsored Workshop on Teaching applied mathematics to post graduate students in Engineering (5/2015)
2. Workshop on Chemical Security and Risk Management organized by Indian Chemical Council (4/2015)
3. QIP sponsored Short Term Course on Recent Advances in Energy Research (3/2015)
4. Pedagogy for effective use of ICT for engineering education under TEQIP (1/2015)
5. Honing Mentoring Skills - A holistic approach under TEQIP (7/2014)
6. International workshop on Perspectives in Dynamical Systems and Control under TEQIP (3/2014)
7. MNEICT sponsored Faculty Development Program on Virtual Labs (2/2014)

RELEVANT SKILLS

- Computation Software: MATLAB/SIMULINK, Mathematica, C++, Python
- Process Simulators: gPROMS, HYSIS, UniSim
- Statistics: Minitab, \mathbb{R}

OTHER COURSES & CERTIFICATIONS

- Introduction to Statistical Learning (7/2012)
- Microsoft Project Professional Training (4/2012)
- Operator Training Simulator - Instructor Training (11/2012), Engineer training (1/2013)
- Online courses: Human Computer Interface Design, Introduction to Operations Management, Social Network Analysis, Game Theory