

SESHU KUMAR DAMARLA

Male, Indian, 28.

Research Scholar,

Department of Chemical

Engineering,

National Institute of Technology

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EDUCATION

Ph.D (Pursuing) in Chemical Engineering

National Institute of Technology, Rourkela, India.

Research Topic: Developing numerical techniques for fractional calculus and design of fractional order controllers

M-Tech. in Chemical Engineering (CGPA: 9.35)

National Institute of Technology, Rourkela, India.

B-Tech in Chemical Engineering (percentage: 60%)

Bapatla Engineering College, Bapatla, Guntur, Andhra Pradesh, India.

TECHNICAL EXPERTISE

- Process Control
 - Data based modeling and Process Control
 - Principal Component Analysis (PCA), Partial Least Squares (PLS), different clustering techniques
 - Design of Neural Controllers
 - Time-series data analysis & System Identification
 - Statistical Process Control.
- Design of fractional order controllers
- Non-traditional Optimization Techniques
- Fractional differential equations

COMPUTATIONAL SKILLS

Experienced in working with **control system design, system Identification** and **Artificial Neural Network** tools in **MATLAB** and **SIMULINK**.

Knowledge in FORTRAN 77, C, Mathematica.

PROFESSIONAL SERVICE

Advisory committee member of International Journal of Engineering, Science and Metallurgy (IJESM)

EXPERIENCE

Worked as Assistant Professor (on contract basis) in Maulana Azad National Institute of Technology Bhopal, India.

ACADEMICA ACHIEVEMENTS

Achieved Institute **Silver Medal** for securing first position in M.Tech

PUBLICATIONS

Refereed Journals

- ❖ Seshu k. Damarla & *Madhusree Kundu, **Design of Multivariable Neural Controllers Using A Classical Approach**. International Journal of Chemical Engineering and Applications. Vol. 1 (2), pp. 165-172, August 2010.
- ❖ Seshu K. DAMARLA and *Palash KUNDU, **Classification of Unknown Thermocouple Type Using Similarity Factor Measurement**. Sensors and Transducers. Vol. 124 (1), pp.11-18, January 2011.
- ❖ Seshu K. Damarla & *Madhusree Kundu, **Monitoring of Drum-boiler using Statistical Techniques**. International Journal of Chemical Engineering and Applications. Vol. 2 (3), pp. 173-180, June 2011.
- ❖ Seshu K. Damarla & *Madhusree Kundu, **Identification and Control of Distillation Process Using Partial Least Squares Based Artificial Neural Network**, International Journal of Computer Applications, Vol. 29 (7), September-2011
- ❖ Seshu Kumar Damarla, Madhusree Kundu, **Decoupling Multivariable Processes using Partial Least Squares for Decentralized Control**, International Journal of Computer Applications, Volume 64, No.5, February 2013

- ❖ Seshu Kumar Damarla, Madhusree Kundu,, **Control of Yeast Fermentation Bioreactor in Subspace**, International Journal of Computer Applications, Volume 64 No.5, February 2013
- ❖ Seshu Kumar Damarla, Madhusree Kundu, **Approximate solution of nonlinear fractional order biochemical reaction model by multistage new iterative method**, Journal of fractional calculus and applications (accepted)

Conference Proceedings

- ❖ *Seshu Kumar Damarla, Design of Neural controllers For MIMO system, **ChEmference 2010**, July 13-14 (2010), Indian Institute of Technology Kanpur, India.
- ❖ K.S Kaushikram, Seshu K. Damarla & *Madhusree K., Design of neural controllers for various configurations of continuous Bioreactor. In the proceedings of **International Conference on system Dynamics and control-(ICSDC 2010)**, August (2010), Manipal University, Bangalore, India.
- ❖ Seshu K. Damarla, Naga C. Kavuri, K.S. Kaushikaram & Madhusree Kundu*, Partial Least Squares: Application in Classification and Multivariable Process Dynamics Identification, **Chemcon 2010**, December 27-29 (2010), Annamalai University, Chennai, Tamilnadu, India.
- ❖ Damarla S, *Kundu M., Clustering Multivariate Time Series Data: Application in Process Monitoring, **International Conference on Mathematical Modeling and Application to Industrial Problems**, March (2011), NIT Calicut, India.
- ❖ Seshu K. Damarla, *Madhusree Kundu, PLS & NNPLS Based Identification and Control of Distillation Process, **International Conference on Process Automation, Control and Computing PACC 2011**, July (2011), Coimbatore Institute of Technology, India.
- ❖ Seshu K. Damarla, *Madhusree Kundu, **Monitoring Semi-Batch Reactor using Principal Component Analysis**, IEEE Proceedings: International Conference on Emerging Trends in Electrical Engineering and Energy Management, December 2012, Aarupadai Veedu Institute of Technology, Tamilnadu, India.
- ❖ Seshu K. Damarla, *Madhusree Kundu, **Online Monitoring of Chromium Sludge Recycling Process using Recursive MPCA**, IEEE Proceedings: International Conference on Emerging Trends in Electrical Engineering and Energy Management, December 2012, Aarupadai Veedu Institute of Technology, Tamilnadu, India.
- ❖ Seshu K. Damarla, *Madhusree Kundu, **Analytical Method for Design of Fractional Order PID Controller**, International Conference on Frontiers in Chemical Engineering, December 2013, National Institute of Technology Rourkela, India.