Bigdata Applications in Process Operations: Modeling, Monitoring and Control

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Overview

The proposed course aims primarily on application of *chemometrics techniques to* BigData problems and deploying them to improve the performance of various process operations. Early definition of chemometrics emphasized usage of mathematical and statistical methods a) to design or select optimal measurement procedures and experiments, and (b) to provide maximum chemical information by analyzing chemical data. Data collection, compression, and storage have become mature technologies over the years. Methods of unraveling BigData along with applications in chemometrics need to be harnessed and thoroughly scrutinized. Interpretation followed by extraction of meaningful information from the high dimensional process database seems to be a natural and logical choice, which is increasingly find its application in system identification, soft sensor design, control engineering, fault detection & diagnosis, process safety & quality monitoring. Good data, better database and even better algorithms are in need for such applications. Considering the applicability of neural networks in BigData analysis, *neural networks and deep learning* have been included in the course proceedings.

Modules	**A: Bigdata Applications in process modeling Monitoring and control : June 25 – 30, 2018** **Number of participants for the course will be limited to fifty.**
You Should Attend If…	✓ you are an electronics engineer or research scientist interested in designing ground If you are a student (B. Tech (Final Year) /M. Tech/PhD) belonging to chemical science and engineering, mechanical, and biochemical engineering ✓ You are Faculty from academic institutions and technical institutions ✓ You are an engineer and researcher from manufacturing, service and government Organizations including R&D laboratories.
Fees	The participation fees for taking the course is as follows: **Participants from abroad : US $300** **Industry/ Research Organizations:** Rs.**12000** **Academic Institutions:** ` Rs.**6000** **Students (India): Rs.2000** The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility. The participants will be provided with accommodation on payment basis.

The Faculty

Prof. S. LAKSHMINARAYANAN is in the faculty of Chemical and Biomolecular Engineering, National University of Singapore. His research interests include Design of Experiments, Control of Large Scale Systems, Modeling of Infectious and Lifestyle-related, Diseases Engineering Education. He has been the Principal Consultant, Development and Engineering Research Center, Mitsubishi Chemical Corporation, Mizushima, Japan.

Madhusree Kundu is the Professor of Department of Chemical Engineering, National Institute of Technology Rourkela, Orissa. Her research interest includes chemometrics, process modeling, simulation and control. Dr. Kundu and her research group is currently engaged in detection and quantification of arsenic in contaminated water through electronic tongue technology.

Course Co-ordinator

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