

# **IChE Report on the workshop and training program on**

## **Classical Modeling Concepts & Hands on Training: Simulation Software**

**3<sup>rd</sup> Feb 2020 to 5<sup>th</sup> Feb 2020**

The inaugural function of the program was graced by Mr. Aviram sharm, trustee, BMSET. Dr. Ravindra D Gudi was the invited chief guest for the program. Vice principle, BMSCE, Dr. Muralidhara M also graced the function as guest of honor. Prof. Badhrinarayan, secretary, IChE, Bangalore regional center graced the function as invite. Dr. Samita Maitra, Dean Academics and Dr. C.T. Puttaswamy, Head of the department, Chemical Engineering, BMSCE were on the dais.

The function started with an Invocation song and lighting of lamp from all the delegates and coordinators of the program. Head of the department, Dr. C.T. Puttaswamy, welcomed the student participants from different parts of the Karnataka for the workshop & training program. Chief guest of the program, Dr. Ravindra D Gudi, briefed the importance of such workshop and training program for students in the domain of simulation, which is the need of the hour. Mr. aviram sharma gave a presidential address, wishing all the best for the program.

Dr. Ravidhra D Gudi, gave a keynote address after the inaugural function. The talk mainly covered the basics of modeling and simulation aspects for different unit operations and unit process. Followed by the keynote address, prof. Shivakumar, explained the basics of simulation software for students. The post lunch sessions on the first were hands on session for students on UniSim software from Dr. Chetan A Nayak followed by prof. Shivakumar on separation process and developing Process Flow diagram for carbon dioxide separations.

The morning session of second day program, was hands on session for the students on UniSim for development of the different flow diagrams for production vinyl chloride, Hydroalkylation of Toluene to Benzene Using Hydrogen and purification of propane and propylene mixture by Dr. Chetan A Nayak and prof. Shivakumar R. post lunch sessions were guest lecture series by

Mr. Kumar Ganapathy, Yokogawa India Ltd., Bengaluru, who explained the role of chemical Engineers in Operator training session, basics of control systems in simulation. The talk was coined as “Process Simulation - Essential Multi-Faceted Tool for Chemical Engineers”. The other talk of the day was from Mr. Mr. Jayasimha, Honeywell, Bengaluru, who explained the need and types of control systems used in the simulation in industries.

On the third day, morning sessions was hands on session for sizing of reactor system for production of methanol process followed by the guest lecture from Mr. Alok Pandit, Equinox Software & Services Pvt Ltd, Pune, India, explain the students about the importance of simulation tool for optimization of the process parameters. How simulation can be a useful tool for better productivity and process optimization with industrial case studies covering wide range industries like, petrochemicals, refinery, fertilizer industries and pharmaceuticals. The post lunch session of the third day, covered other lecture from Dr. Renganathan, Associate Professor, Chemical Engg, IIT, Madras, who shared in practical knowledge and use of Aspen tool for simulation of gasification process, importance of thermodynamic models, fluid packages, mat lab tool integration for simulation of gasification and plasma gasification.

Dr. Renganathan, Associate Professor, Chemical Engg, IIT, Madras and principal of BMSCE, Dr, Ravi Shankar was present in Valedictory function of the program. Principal congratulated the head of the department and coordinator was successfully holding the workshop for the students and distributed the certificates.





## Registration Form

### Classical Modeling Concepts & Hands on Training: *Simulation Software*

(3<sup>rd</sup> February-5<sup>th</sup> February 2020)

1. Name: \_\_\_\_\_

2. Designation: \_\_\_\_\_

3. Department: \_\_\_\_\_

4. Name of the College/Company and Address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Email Id: \_\_\_\_\_

6. Mobile No: \_\_\_\_\_

7. DD number with date and bank:

\_\_\_\_\_

\_\_\_\_\_

8. Signature & date:

Signature of the Head of the  
Institution/Department/Company (With  
Seal) (Xerox copies are also accepted)

## ADVISORY COMMITTEE:

**Dr. B.S.Ragini Narayan,**  
Donor Trustee, BMSET

**Dr. P. Dayananda Pai,**  
Chairman,BOG, BMSCE

**Dr. B. V. Ravishankar**  
Principal, BMSCE

**Dr. S Muralidhara**  
Vice-Principal, BMSCE

## ORGANISING CHAIR:

**Prof. C. T. Puttaswamy**  
Head of Department  
Dept of Chemical Engineering, BMSCE

## CONVENOR:

**Dr. Chetan A. Nayak**  
Assistant Professor  
Dept. of Chemical Engineering  
BMS College of Engineering  
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## CO-CONVENOR:

**Mr. R. Shivakumar**  
Assistant Professor,  
Dept. of Chemical Engineering  
BMS College of Engineering  
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## B.M.S. COLLEGE OF ENGINEERING

Autonomous College under VTU  
(Approved by AICTE, Accredited by NBA & NAAC)  
P. B. No. 1908, Bull temple Road,  
**Bengaluru-560 019**

IICChE Bangalore regional center



**Sponsored Workshop**  
**Classical Modeling Concepts**  
**& Hands on Training:**  
***Simulation Software***

**3<sup>rd</sup> to 5<sup>th</sup> February 2020**



Organised by

**Department of Chemical Engineering**  
**B.M.S. College of Engineering**  
**Bengaluru-560019**



## About the College

The B.M.S. College of Engineering (BMSCE) was found by the great visionary and philanthropist Late Sri. B. M. Sreenivasaiah in the year 1946. After the demise of the founder, his illustrious son Sri. B.S.Narayan took over the reign of the College. Under his able leadership, the college grew from strength to strength. BMSCE is the first engineering college established in the country (pre independent India) by a private enterprise. The college is an aided institution (by Government of Karnataka) and affiliated to Visvesvaraya Technological University (VTU).

BMSCE offers 13 UG, 16 PG & Research programs. The College became an autonomous institution under VTU in the year 2008-09. In the year 2011, BMSCE was recognized as a QIP Centre in Engineering & Technology by All India Council for Technical Education (AICTE). The College is one among the few Engineering Colleges in the State qualified for Phase-3 of the Technical Education Quality Improvement Programme (TEQIP), a world bank sponsored project. BMSCE is the only partner institution from India along with the other universities located in Chile, China, Germany and USA for the Melton Foundation. The Institution is accredited by National Assessment and Accreditation Council (NAAC) with a CGPA of 3.83 at A++ grade valid up to March 2024.

## About the Chemical Engineering Department

The branch of Chemical Engineering is established in 1995 with an intake of 30 students. Currently the intake has been increased to 60 students. The bright and highly motivated students are the real ambassador of the department. Department has well qualified faculty. In 2013 the department has started post graduate program in Biochemical Engineering, the first course in VTU with the title. The college has laid its focus to impart synergistic education in the field of Chemical Engineering between industry and academia. The institution has thus been able to contribute a large pool of talented Chemical engineers to the industry and also for research. The Undergraduate program of the department is accredited for 6 years by NBA according to Tier-I Format from 2014-2020.

## About the Workshop program

Process engineering design with controls is tedious to optimize in chemical processes without the aid of software tools. Process simulation software, such as DWSIM ASPEN PLUS, UNISIM, CHEMCAD or PRO/II, plays a major role in chemical engineering avenue. Most of the industries utilize this software in their routine operations, The workshop aims at providing a platform to integrate the simulation software with theoretical concepts. The participants can have hands on training on UNISIM software. This software proves handy for design, optimization and simulation for the steady & dynamic systems.

## Resource Persons for the Program

**Dr. Ravindra D. Gudi**, Professor, Department of Chemical Engineering, IIT Bombay, Mumbai

**Dr. Alok Pandit**, Director, Equinox Software & Services Pvt Ltd, Pune, India.

**Dr. Chetan A Nayak**, Assistant Professor, Department of Chemical Engineering, BMSCE, Bengaluru

**Mr. Shivakumar R**, Assistant Professor, Department of Chemical Engineering, BMSCE, Bengaluru

## Registration Fees

The payment of the fee needs to be made through Demand Draft in favor of “**HoD Chemical Engineering**” payable at Bengaluru. No TA /DA or Accommodation will be provided to the participants. Duly filled scanned copy of the application need to be sent to the coordinators mail id or by postal mail before the last date.

**Registration Fee : Rs. 1000/-**

## Important Dates:

Last date for receiving applications: **25<sup>th</sup> January 2020** Date of Intimation to the selected candidates through mail: **30<sup>th</sup> January 2020**



**B.M.S. COLLEGE OF ENGINEERING**  
Autonomous College Affiliated to VTU  
**DEPARTMENT OF CHEMICAL ENGINEERING**



## WORKSHOP SCHEDULE

### *Classical Modeling Concepts & Hands on Training: Simulation Software*

**3<sup>rd</sup> Feb 2020 to 5<sup>th</sup> Feb 2020**

Date	Time	Program details	Speakers	Venue
3 <sup>rd</sup> February 2020 Monday	8:30 to 9:30am	Registration		Venue-1
	9:30 to 10:00 am	Inaugural function	Dignitaries	Venue-1
	10:00 to 10:15 am	High Tea and Discussions		
	10:15 to 11:30 am	Key note address	Dr. Ravindra Gudi Professor, HoD, Chemical Engg, IIT, Bombay	Venue-1
	11:30 to 13:00pm	Basics of simulation tools with their importance	Mr. Shivakumar R, BMSCE	Venue-1
	13:00 to 14:00 pm	Lunch Break		
	14:00 to 15:00pm	Development of Process flow diagram for different unit operations: Hands on Session	Dr.Chetan A Nayak, BMSCE	Venue-2
	15:00 to 15:15 pm	Tea Break		
	15:15 to 16:30 pm	Separating CO <sub>2</sub> from Synthesis Gas :Development of flow diagram and Simulation	Mr. Shivakumar R, & Dr.Chetan A Nayak, BMSCE	Venue-2
4 <sup>th</sup> February 2020 Tuesday	9:00 to 10:00 am	Production of Vinyl Chloride	Mr. Shivakumar R & Dr.Chetan A Nayak, BMSCE	Venue-2
	10:00 to 10:15 am	Tea Break		
	10:15 to 11:30 am	Hydroalkylation of Toluene to Benzene Using Hydrogen: Development of flow diagram and Simulation	Dr.Chetan A Nayak, & Mr. Shivakumar R, BMSCE	Venue-2
	11:30 to 13:00pm	Simulation of Separation Column for Propylene-Propane Mixture: Development of flow diagram and Simulation	Mr. Shivakumar R, & Dr.Chetan A Nayak, BMSCE	Venue-2
	13:00 to 14:00 pm	Lunch Break		
	14:00 to 15:00pm	Process Simulation - Essential Multi-Faceted Tool for Chemical Engineers	Mr. Kumar Ganapathy, Yokogawa India Ltd., Bengaluru	Venue-1
	15:00 to 15:15 pm	Tea Break		
	15:15 to 16:30 pm	Overview of Industrial Process Control in simulation and modeling	Mr. Jayasimha, Honeywell, Bengaluru	Venue-1

5 <sup>th</sup> February 2020 Wednesday	9:00 to 10:30 am	Methanol synthesis from hydrogen and carbon dioxide: Development of flow diagram and Simulation	Dr.Chetan A Nayak, & Mr. Shivakumar R, BMSCE	Venue-2
	10:30 to 10:45 am	Tea Break		Venue-2
	10:45 to 12:00 am	Industrial Applications of Process simulation- A glance at some projects from the last decade	Dr. Alok Pandit, Equinox Software & Services Pvt Ltd, Pune, India.	Venue-2
	12:00 to 13:00pm	Introduction to dynamics in simulation using Unisim	Dr.Chetan A Nayak, & Mr. Shivakumar R, BMSCE	Venue-2
	13:00 to 14:00 pm	Lunch Break		
	14:00 to 15:15pm	Fundamentals and application of Aspen, for thermodynamic simulation of gasification processes	Dr. Renganathan T, Associate Professor, Chemical Engg, IIT Madras	Venue-1
	15:15 to 15:30 pm	Tea Break		Venue-1
	15:30 to 16:00 pm	Test and Feed Back		Venue-1
	16:00 to 16:30 pm	Valedictory & Certificate Distribution		Venue-1

Venue 1: BMS Auditorium 2, Platinum Block

Venue 2: MCA Computer Lab PG block, 1<sup>st</sup> floor