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Report

On

Three Days Faculty Development Programme on

"APPLICATIONS OF CHEMCAD SOFTWARE"

Organizing Committee

Dr. Latesh B. Chaudhari, Principal - FETR, Co-ordinator, Nodal Institute - NGPP
Prof. A. B. Suthar, Principal - NGPP
Prof. J. M. Barad, I/C Head, Chemical Department - FETR

Mentors

Dr. P.A. Joshi, Chairman
Prof. S. J. Vasavada, Asso. Coordinator
Anchor Institute, D.D.U., Nadiad

Course Coordinators

Prof. Sahil N. Prajapati
Prof. Ketan J. Panchal

Jointly Organized by

Nodal Institute - Faculty of Engineering Technology and Research & N.G. Patel Polytechnic, Bardoli

Under stewardship of

Anchor Institute - Chemicals & Petrochemicals

Promoted by

Industries Commissionerate, Government of Gujarat

In Partnership with

Dharmsinh Desai University, Faculty of Technology, DDU - Nadiad.

OVERVIEW OF COLLEGE AND PROGRAMME:

Nodal Institute N.G. Patel Polytechnic (NGPP), Bardoli and Faculty of Engineering Technology & Research (FETR), Bardoli, have organized Three Days Faculty Development Programme on "**APPLICATIONS OF CHEMCAD SOFTWARE**" on 3rd - 5th July 2014. N.G. Patel Polytechnic, Bardoli, is recognized by the AICTE and affiliated to Gujarat Technological University (GTU), Ahmedabad. N G Patel Polytechnic functions as Nodal Institute for Anchor Institute-Chemicals & Petrochemicals. Till date it has organized 30 training courses for different level of participants. 511 industrial, 279 faculty members and 1055 students of Degree, Diploma Chemical Engineering and ITI Chemical trade and junior and senior level personnel have attended the training courses.

In accordance with GTU INNOVATION COUNCIL, we at Faculty of Engineering Technology & Research have decided to put our efforts in for students/faculties those having an inclination towards entrepreneurship and innovation and thus initiate Students Startup Support System (S4) Committee. The agenda of this committee will be to arrange workshops and seminars that help final year and alumni students and faculties explaining the needs of entrepreneurship, impart the knowledge to achieve/startup such entrepreneurship and in need help them startup/implement their ideas. As required, experts, Industrial persons and successful entrepreneurs shall be called in to relay their knowledge and experiences with the students/faculties. This committee shall also pay attention on outstanding pre-final year students that have exceptional knowledge and feasible innovative ideas that could be implemented and worked upon. The main objective of the training program is to provide an improved up-to date understanding of the fundamentals, principles and practices associated with the design, operation and maintenance of industrial boilers and, in a broader view, of industrial systems and processes generating, transforming or using thermal energy from combustion. The course will provide in-depth knowledge right from the formation of steam to the standard procedure for installation, operation and maintenance of Boilers. The Conference will provide a forum for delegates involved in research, design and operation of boiler systems, and will also be of interest to those working in areas such as combustion science, energy efficiency and environment control.

A total of 21 faculties from Chemical and Mechanical Engineering Department from FETR and NGPP college have participated in the faculty development programme.

ABOUT THE COURSE:

CHEMCAD software has wide applications in several industries such as chemical industries, refinery, pharmaceutical companies, etc. In general, the uses of the software are

(1) Investigating a new process by simulating various alternatives to determine the feasibility of each.
(2) Simulating an existing process to determine optimal conditions, bottlenecks, or sensitivity to process changes.
(3) Simulating an existing process to determine control schemes, dynamic behavior, etc.
(4) Day to day engineering work (e.g. bubble/dew points, fluid properties, equipment sizing).

This course has provided hands-on training of the CHEMCAD software on several unit operations and flowsheeting.

Course content

- Overview of CHEMCAD applications
- Navigating the physical property database
- Overview of thermodynamic options
- Building flowsheet for design and simulation steady state and unsteady state problems.

Coverage of programme

- Distillation
- Reactors
- Heat Exchangers
- CHEMCAD Graphics & Reports
- Designing
- Regressing Kinetic Data for Reactions

The list of the participants is given below:

Sr. No.	Name	Branch	Designation	Institute
1	LATESH B. CHAUDHARI	Chemical	Principal	FETR, Bardoli
2	JAYDEEP M. BARAD	Chemical	HOD, CHEM. DEPT.	FETR, Bardoli
3	SEJAL M. CHAUHAN	Chemical	Asst. Prof.	FETR, Bardoli
4	NIRAV C. RAYKUNDALIYA	Chemical	Asst. Prof.	FETR, Bardoli
5	KETAN J. PANCHAL	Chemical	Adhoc Asst. Prof.	FETR, Bardoli
6	SAHIL N. PRAJAPATI	Chemical	Adhoc Asst. Prof.	FETR, Bardoli
7	PRATIK B. PATEL	Chemical	Adhoc Asst. Prof.	FETR, Bardoli
8	TARUNA N. PATEL	Chemical	Adhoc Asst. Prof.	FETR, Bardoli
9	CHIRAG C. MEVADA	Chemical	Adhoc Asst. Prof.	FETR, Bardoli
10	KRUNAL S. RAMANANDI	Chemical	Adhoc Asst. Prof.	FETR, Bardoli
11	KARTIK R. DESAI	Chemical	HOD, CHEM. DEPT.	NGPP, Bardoli
12	MUKESH B. DHANGAR	Chemical	Lecturer	NGPP, Bardoli
13	MANISH R. NASIT	Chemical	Lecturer	NGPP, Bardoli
14	TARAK C. PADHIYAR	Chemical	Lecturer	NGPP, Bardoli
15	HIMANSHU S. DESAI	Chemical	Lecturer	NGPP, Bardoli
16	URVIJ B. DAVE	Chemical	Asst. Prof.	FETR, Bardoli
17	ASHISH K. DESAI	Mechanical	Asst. Prof.	FETR, Bardoli
18	KAMLESH K. ARANIYA	Mechanical	Asst. Prof.	FETR, Bardoli
19	VISHAL P. BHAGATWALA	Mechanical	Asst. Prof.	FETR, Bardoli
20	HIMANSHU S. CHAUDHARI	Mechanical	Adhoc Asst. Prof.	FETR, Bardoli
21	PARIMAL S. CHAUDHARI	Mechanical	Adhoc Asst. Prof.	FETR, Bardoli

The workshop started with formal inaugural function at 10:00 A.M. The inaugural session was begun with welcome of the expert Mr. Prabinkumar Chaudhary who came from the M/s Ingenious Process Solutions, Mumbai. And Mr. Prabin was welcomed by Dr. Latesh B. Chaudhari with flock of flowers.

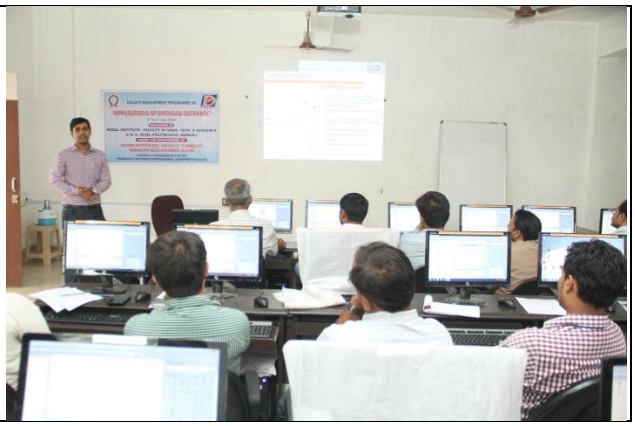
A brief introduction about invited expert Mr. Prabinkumar Chaudhary (Process Simulation Engineer, Ingenious Process Solutions, Mumbai), was given by Prof. Sahil N. Prajapati. Mr. Prabin has done his graduation in Chemical Engineering from National Institute of Technology, Warangal and post graduate in Advanced Manufacturing Technology from Swinburne University of Technology, Melbourne Australia. He was awarded by Embassy of India, Kathmandu, Nepal for his 4 years Undergraduate Study (B.Tech, Chemical Engineering) at National Institute of Technology Warangal, A.P., India. He has experience as Research

Welcome Speech

Welcome with flock of flowers

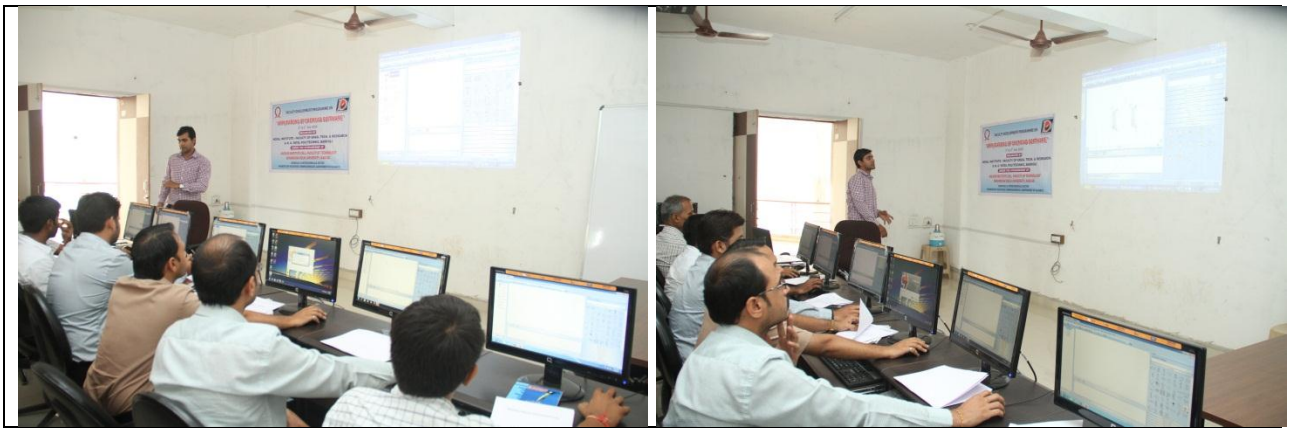
Fellow in Fletcher Insulation, Victoria, Australia. Mr. Prabin is currently working with Ingenious Process Solutions, Mumbai as a Process Simulation Engineer since 2011. He is an engineering professional of high repute, who has 3 years' experience in process simulation relating to all major types of chemical plants.

The first session was started by our expert at 11 AM. It was begun with the importance of the chemcad software in the various chemicals industries along with the feedback from the industries. After that, the main part of the course was started.



The main features of the chemcad software were covered in the pre-lunch session. The selection of the components and thermodynamic models were taught in the post-lunch session. The method for finding out the different properties of the unknown chemical component and generation of VLE for known components mixtures were also discussed in the same session. After getting this knowledge, we had designed the piping system of the given problem.

On the 2nd day of our training session, we started our 1st session at around 9:30 AM. In this session, we have started the design of Heat Exchangers. And the rating and simulation of the Heat Exchanger was followed by it. The report generation along with TEMA sheet was taught by our expert. The design of Distillation column was covered up to pre-lunch session. After 2:00 PM, we have done the simulation of the Distillation column. Various problems on different component mixtures are solved in the post-lunch session.



The 3rd and last day of the programme was very much useful for us. In the morning session around 9:30 AM, the design of different types of reactors was discussed. It includes the Batch reactor, Plug flow reactor, Mixed flow reactor, etc. The problem of data regression for frequency factor and activation energy was solved and it was much more useful for chemical engineer.

In the last session of our programme, addition and use of the control loops were studied. The control valve specifications and controller specifications are the basic need for control loop, and it was nicely explained by our expert. We had ended our programme with certificate distribution. All the participants are very happy with the basic and enough knowledge for beginning level of chemcad software.