Prerana Rathore 100020030
Chemical Engineering UG Third Year (B.Tech.)
Indian Institute of Technology, Bombay Female
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EXAMINATION	UNIVERSITY	INSTITUTE	YEAR	CPI
GRADUATION	IIT BOMBAY	IIT BOMBAY	2013	8.38

SCHOLASTIC ACHIVEMENT

- Currently pursuing **Honor** degree along with B.Tech in Chemical Engineering
- Pursuing **Minor** degree in **Energy Science and Engineering**
- Secured **AA** grade in Numerical analysis, chemical reaction engineering, Differential equations and Sociology courses
- **Won Jila Stariya Gyan Vigyan Mela** in 2007 that was a district level science competition

KEY RESEARCH PROJECT

Development of societal risk acceptance criteria (Autumn 2013-persent)
Guide: Professor Sandip Roy

- Studied societal RAC (risk acceptance criteria) in different countries and **analyzed** statistical data of industrial accidents taking place in India
- **Developed** societal RAC for India based on socio economic parameters

Electroless Plating and Bipolar Electrolysis Peeling (Summer 2012-Spring 2013)
Guide: Professor Vinay A. Juvekar

- Coated **copper** on glass beads by electroless plating using different and modified protocols
- Measured the thickness of copper coating and also checked the uniformity of it
- **Established a new protocol** such that all the glass beads can be coated
- Worked on **reduction of silver amount** in electroless silver plating to **optimize the cost**

KEY ACADEMIC PROJECT

Techno Economic Comparative Study under CTARA Department to Design Water Supply Scheme (Spring 2013)
Guide: Professor Raj Desai

- Visited Khardi and 5 other neighboring villages of Maharashtra and **analyzed** currently nonfunctioning water supply scheme and problem villagers are having due to this
- **Designed** a **much more efficient and economical** water supply scheme compared to the current scheme and the new scheme proposed by MJP (Maharashtra Jal Pradhikaran) using software BRANCH and EPANET
- Used BRANCH for **capital cost optimization** and EPANET for **simulation**
- This Scheme is **forwarded to Delhi** for future action

Overview of Quantitative Risk Measures (Spring 2013)
Guide: Professor Sandip Roy

- Calculated location specific individual risk and societal risk for a hypothetical accident including **toxic gas release, explosion** etc.
- Contour plots were drawn considering wind direction and wind speed
- Calculated structure damage and economic loss

Microreactor for Biochemical Analysis (Spring 2013)
Guide: Professor Rahul Srivastva

- Studied fabrication techniques for microreactors, their benefits and applications
- Studied **palladium membrane** microreactor based on bulk micromachining technique in detail
- Catalogued **customer requirements** and **functional specifications** for microreactors

Snakes and Ladders Game (Autumn 2010)
Guide: Professor D.B. Pathak

- Developed a program in C++ for **Animated Snake and Ladders** game
- Implemented a user friendly interface **using E-Z windows** and **a**nimated effects were given
- Incorporated basic data structures in the algorithm to roll a die with intensity user wants

INDUSTRIAL WORK EXPERIENCE

Uhde India Limited (heat exchanger designing) (Summer 2013)

- **Designed** new Shell and Tube heat exchanger and **simulated** existing heat exchanger using software named **HTRI** and **Aspen-EDR**
- Compared output of both software and compared them with output given by vendor to company for same input
- Learnt about pumps and valves and performed calculations on **sizing of PVR**

National chemical laboratory, Pune (*Process design and optimization)* (Winter 2012)

- Generated equilibrium data and identified **optimum conditions** for syngas production by **DR** (dry reforming) and **DATR** (dry auto-thermal reforming) of methane using **HSC chemistry 5.1**
- Performed calculation for utilities at different conditions
- **Designed heat exchanger network** to **minimize** the **utility** requirement

COMPUTER AND SOFTWARE SKILLS

- Worked with **MATLAB** and **SCILAB**
- Worked with **HTRI** and **HSC chemistry**
- Worked with **EPANET** and **BRANCH**
- Knowledge of **Mathematica** and **Comsol 3.5**
- Knowledge of **c++** programming language and **E-Z windows**
- Operating system: windows, LINUX
- Very familiar with **Excel** and other Microsoft tools.

POSITION OF RESPONSIBILITY

Coordinator in Techfest 2012

- Successfully **organized** a new event **"Magneto"** under Competitions which was held for **first time** in Techfest involving almost 80 participant teams
- **Defined task** for participants and **selection criteria**, handled the pre-event planning of the competition including planning of track construction, arrangement of the infrastructure required, promotion of event etc.
- **Collaborated** with organizers and **delegated** to them for the successful execution of the event

Production incharge in PAF 2012

- Coordinated with three other hostels and led a team of 20 students to design and construct a setup for show performance with total budget of INR. 25000 in performing art festival (PAF)
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Coordinator in Azeotropy 2012

- Successfully organized "Quizzes" and "LCA" events under Competitions involving almost 40 participants

Organizer in Techfest 2011

- Successfully organized an event under KPR involving almost 30 participant teams

EXTRA CURRICULAR ACTIVITIES

- Member of team of Fine Arts section and received **PAF COLOR** award in **PAF 2011**
- Participated in Institute Level Dramatics Competition 'Freshie Prod'
- Activities include reading novels, solving puzzles, gardening
- Represented my hostel in Institute **Cross Country Race (8 km.)** securing 19th place
- Participated in **Trackmania**- remote controlled car racing competition (with a self-created bot and circuit) organized by Technical Club IIT Bombay