PREETIKA KARNAL
CPI- 8.69

Intermediate (CBSE)	AECS Indore	92.20%
Matriculation	AECS Indore	93.80%

Academic Achievements

- All India Rank 687 in IIT JEE 2010
- Distinguished scholar of National Talent Search Examination 2008, awarded to top 1000 students in India
- Awarded certificate of merit by CBSE for being among top 0.1% of successful candidates in Science in 2008
- Secured an All India Rank 63 in National Science Talent Search Examination 2008
- Awarded the certificate of merit for distinctive performance in 9th National Science Olympiad by Science Olympiad Foundation in 2008

Academic Projects

Project on **Simulated Moving Bed Chromatography** at **University of Alberta**   May 2013-July 2013
Guide: Prof. Arvind Rajendran
- Understanding the application of SMB (Simulated Moving Bed) and applying Bypass.
- Assessing advantages of Bypass-SMB over SMB and evaluating operating parameters for maximum benefit.

Project on **Organic Solar Cells** at **BARC** (Bhabha Atomic Research Center)   May 2012-July 2012
Guide: Dr. D. K. Aswal, Head -Thin Films Devices Section
- Synthesized bilayer organic solar cell devices using electrochemical deposition of fullerene, electrochemical deposition of porphyrin, spin coating of PEDOT:PSS, thermal deposition of aluminium on properly cleaned ITO coated glass substrate
- Characterized the cells using U-V Spectrophotometer

Project Biosynth, IIT Bombay   May 2011-July 2011
Guide: Prof. Sanjay Mahajani
- Member of Biosynth, a first ever student's initiative to setup a Biodiesel plant at an institute level in India
- Worked on resin experimentation, methanol feed ratio and different types of oil as a part of Research and Development Team
- Actively participated in commissioning work of plant, and carried out mock runs to identify flaws

Rashtriya Chemical Fertilizers Training Program   Course report, Spring 2011
Guide: Prof. Sanjay Mahajani, Prof. Madhu Vinjamur   Chemical Dept, IIT Bombay
- Successfully completed the Industrial Training Programme on Sulphuric Acid production conducted by Rashtriya Chemical Fertilizers Pvt. Ltd, Chembur
- Performed mass balance on the sulphuric acid producing unit

Project in C++, IIT Bombay   Course project, Autumn 2010
Guide: Prof. D.B Phatak   CSE Dept., IIT Bombay

- Worked in a group project to make a game 'Pocket Tanks', using C++ and EZwindows (GUI)
- Involved data storage and handling, codes for terrains, weapons, destruction, and movement

Project in C++, AECS Indore   Course project, 2009
Guide: Mr Lokesh Joshi   AECS INDORE

- Developed a program for academic online counseling, on allotment of seats, in colleges using C++
- Involved data storage and use of graphics

Technical Skills

- Programming Languages and Software Packages: C++, MATLAB, COMSOL, Lab View, OriginPro, LaTeX
- Operating Systems: LINUX, Windows

Relevant Courses

- **Departmental Courses**
  Introduction to Numerical Analysis, Chemical Thermodynamics, Mass Transfer Operations, Material Science, Chemical Reaction Engineering, Process Fluid Mechanics, Fundamentals of Heat and Mass Transfer, Transport Phenomenon
- **Additional Courses**
  Computational Fluid Dynamics, Biomedical Microsystems
  Honors- Department of Chemical Engineering (Advanced Chemical Reaction Engineering , Advanced Transport Phenomenon, Molecular and Statistical Thermodynamics)
  Minor- Department of Energy Science & Engineering (Introduction to Renewable Resources, Energy Management, Energy Resource Environment & Economics, Fuel Cells)

Extra-Curricular Activities

- Basic Contemporary dancing class in IIT Bombay
- Swimming Course in IIT Bombay