

DHANANJAY GUPTA

Department of Chemical Engineering, IIT Kanpur

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ACADEMIC PERFORMANCE

YEAR	DEGREE/CERTIFICATE	INSTITUTE/CITY	CGPA/%
2020-Present	M.Tech in Chemical Engineering	Indian Institute of Technology, Kanpur	8.0/10
2015-2019	B.Tech (HONS.) in Chemical Engineering	Dr. Ambedkar Institute of Technology, Kanpur	78.72%
2013	CBSE/XII	Guru Nanak Public School, Kanpur	76.6%
2011	CBSE/X	Guru Nanak Public School, Kanpur	8.6/10

PROFESSIONAL WORK EXPERIENCE

KANSAI NEROLAC PAINTS LIMITED

Sept. 16, 2019, to Sept. 30, 2020

- Posted as a graduate engineering trainee in the water-based paint emulsion department
- Attended plant safety, HAZOP and security seminars, and workshops organized by the safety department.
- KAIZEN participation for **cost, quality, productivity**, and **just-in-time delivery** improvement.
- Managed manpower **handling and deployment**, maintained **5-S** on the shop floor and participated in internal and organizational audits
- Knowledge of **seven quality control** tools and learned about **Six Sigma, TQM, and FMEA** tools

SCHOLASTIC ACHIEVEMENTS

- Secured '**AIR 190**' in **GATE 2022** Chemical Engineering out of **147373** students
- Runner-up in "Rotary Science Models Contest" for Physics December 2011
- Secured 189th rank (Kanpur City) in International Mathematics Olympiads February 2010

TECHNICAL SKILLS AND SOFTWARES

Technical skills

- SCADA (PCS and DCS)** Operations.
- Tubular and vacuum furnace setup assembling and disassembling,
- Autolab potentiostat and galvanostat, Brunauer-Emmett-Teller (BET), SEM, TGA, XRD, Raman Spectrometer, Keithley** Operations.

Software skills

- Programming Languages** - C, C++, My SQL, Python, MatLab
- Software and Application**– Aspen Plus, COMSOL, MS Excel, MSWORD, MS PPT.

PROJECTS

Summer Project	"Catalytic Beads Preparation by Suspension Polymerization and Pilot Plant operation for Shell India Market Private Limited" <i>Supervisor: Prof. Nishith Kumar Verma (IIT Kanpur)</i>	15 Feb. 2021 - present
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- Lettered **dual metal** in-situ impregnated **catalyst** preparation and **parameter optimization**
- Assimilated carbonization, steam activation, H₂ reduction and chemical vapor deposition techniques
- Comprehensive study of controller parameter (PB, Integral time, Derivative time) **tuning and optimization**.
- Continuous Operation of the pilot plant, catalyst bed preparation for phenol cracking via **CWAO** mechanism and engineered assembling, disassembling and maintenance of HPLC pumps, RTDs

M.Tech Thesis	"Laser-Induced Graphene and Cu Nanoparticles Functionalized Microtextured Chemiresistive Sensor for the Detection of Aqueous Hg²⁺" <i>Supervisor: Prof. Nishith Kumar Verma (IIT Kanpur)</i>	Jan 2021-present
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- Invented a low-cost sensor for industrial application and successfully able to convert the **idea into a prototype** and **filed a patent**
- In collaboration with Envisen Research Laboratory Pvt. Ltd. for sensor **commercialization**.
- Comprehensively optimized chip fabrication scheme and sophisticated handling of instruments
- Laser ablated micro channelled patterns drawing on polymer substrate to grow Laser-Induced Graphene (LIG)
- Optimization of chemical vapour deposition technique for CNF growth.

B.Tech Project	"Production of Formaldehyde from Methanol on Commercial Scale" <i>Supervisor: Prof. Sumit Prajapati</i>	2018-2019
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- Comprehensive study for integrated design of equipment, plotted design scheme and flow diagrams of various unit operations in a compact area
- Detailed evaluation of project cost, operation parameters, equipment sizing, choosing best construction materials and design safety precautions

Course Project Special Topic (CHE659A)	"Multi-Physics Modeling of Electrochemical Deposition" <i>Supervisor: Prof. Siddhartha Panda (IIT Kanpur)</i>	Jan-May 2021
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- Lettered applications of **COMSOL** for simulating deposited metal thickness
- Constructed requisite geometry and mesh structure also developed and optimized conditions for electroplating
- Setting up boundary conditions and analyte concentration, current density and electrolyte conductivity as parameters for carrying out simulation

INDUSTRIAL TRAINING

KANPUR EDIBLES PVT. LTD. - "Crude Oil Refining and various unit operations involved" 1 June-1 July 2018

- Embraced work ethics of fire and safety department and crude oil processing, purifications and various testing parameters involved
- Working and operating conditions of production units namely deodorizer, centrifugal separator, leaf filter, autoclave, vacuum dryer etc. and process flow diagrams (PFDs).

POSITION OF RESPONSIBILITY

Teaching Assistant Chemical Engineering IIT Kanpur

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| a) CHE631A: Chemical Reaction Engineering | July, 2021-Present |
| b) Assisted DPGC at IIT Kanpur | Jan-May, 2020 |

EXTRA CURRICULAR ACTIVITIES

- Participated in table tennis in the annual sports meet organized at Dr AIITH, Kanpur.
- Won first prize in Inter School science exhibition in 8th standard for biogas plant model.
- Participated in Inter school science project in 7th standard.