

NURUDDIN BAHAR

MS, MTech, BTech

EDUCATION

MS (Biomedical Engineering)

2018 - 2020

University of Glasgow, Glasgow, UK

- Qualified with Distinction
- THESIS: Design and characterization of poly(ethylene glycol) laminin (PEG LM) based mechano-responsive hydrogels for drug delivery and gene therapy Grade A4 (19/22)

MTech (Nanotechnology)

2015 - 2017

Indian Institute of Science, Bangalore, India

- Qualified with CGPA 5.9/8.0
- THESIS: Towards DNA Origami Based Magnetic Nanopropellers Grade A (7/8)

BTech (Chemical)

2009 - 2013

Indian Institute of Technology Bombay, Mumbai, India

- Qualified with CPI 7.53/10.0

WORK EXPERIENCE

Empanelled Trainer

Boston Institute of Analytics, Aurangabad, India

07/2023 - Present

- Trained aspiring professionals for SQL, Statistics, Python, Advanced Excel and Power BI

Research Scientist

Wockhardt Research Centre, Aurangabad, India

Bioprocess Engineering and MSAT

10/2020 - Present

- In process of creating a Django website to display relevant projects
- Created a VBA-based robotic batch process recording application for ease of reporting
- Statistically calculated mock pools for CIEC stage of Insulin Glargine and RP stage of Yeast Human Insulin using pandas and matplotlib
- Created a Python-based design of experiments user interface for creating experimental plans for given parameters
- Statistically analyzed 2021-22 batches of Yeast Insulin, applied Python-based data visualization, inferential statistics and descriptive statistics
- Built Gantt charts, timeline charts, chromatograph visualization tool using Python

Downstream Processing

06/2021 - 06/2022

- Conducted and coordinated in 50+ downstream batches of insulin variants, including DBC determination, solubilization, refolding, capture, cation-exchange chromatography, reverse-phase chromatography, precipitation, and lyophilization
- Conducted impurity analysis using analytical chromatographic data for various stages, and improved the process using pivot tables in excel
- Successful in improving CIEC yield of Insulin Glargine to 85%+ and purity to 90%+

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Portfolio of Projects

Scholastic Achievements & Awards

- AIR 718 - IITJEE 2009
- AIR 16 - GATE (Biotechnology) 2015
- CSIR-JRF (Life Sciences) 2015, 2018
- CBSE 10th merit certificate for 100% in social science 2006

Certifications

- Certified Associate in Python Programming (Python Institute)
- MS Excel Expert (Microsoft)
- MS Word Expert (Microsoft)
- MS Outlook Associate (Microsoft)
- MS PowerPoint Associate (Microsoft)

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- Conducted alternate vendor experiments for TBEE used in yeast insulin conversion reaction from precursor to ester
- Created and analyzed zinc precipitation DOE for insulin Glargine using JMP
- Conducted experiments in various downstream stages of E.coli Liraglutide, including conversion, acylation, CIEC, RPC, and lyophilization
- Created and updated SOPs and IQ, OQ, PQ documentation for operation and calibration of downstream instruments like UPLC and hotplate magnetic stirrer

Upstream Processing

10/2020 - 06/2021

- Conducted and coordinated in 30+ upstream batches of insulin variants, including inoculation, seeding, fermentation, harvesting, and Insulin Body (IB) processing for Aspart, Lispro, Liraglutide (both yeast and E.coli)
- Documented 15+ reports, including standard operating procedures, IQ, OQ, process development, calibration and alternate vendor qualification
- Quantified E.coli Liraglutide precursor using SDS-PAGE
- Assessed effect of temperature, RPM and pre-seed on Aspart inoculum by shake-flask study

Associate Software Engineer

Exeter Software Pvt. Ltd., Bengaluru, India

07/2013 - 01/2014

- Learned essentials of Javascript, SQL, HTML, CSS and Salesforce as a part of training
- Certified with Oracle Policy Automation 10 Rule Developer Essentials 1Z0-534
- Created an online passport application portal using Salesforce

TRAINING AND INTERNSHIPS

Skill Development Trainee

Centre for Cellular and Molecular Biology, Hyderabad, India

10/2017 - 01/2018

- Pursued hands-on advanced course on 'Cell culture, cell line derivation, and human disease biology'

R & D Intern

Tridiagonal Solutions Pvt. Ltd., Pune, India

05/2012 - 07/2012

- Developed and optimized CSTR and tank-in-series models for a chemical plant simulation
- Explored process modelling applications like cape open to cape open (COCO) and differential algebraic equation (DAE) tools

CONFERENCES ATTENDED

Chemical Engineering Association Symposium (ChEA), IISc Bangalore 2017

- Presented poster on 'DNA Origami Based Magnetic Nanopropellers'

International Conference on Emerging Electronics (ICEE), IIT Bombay 2016

- Presented paper on 'Two-tier size optimization of monodispersed iron-oxide nanoparticles'

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Portfolio of Projects

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PROJECTS

Django Website

- Currently creating a portfolio website using Django, Python, TinyMCE, HTML, CSS and JS
- Created topic-wise list of projects, including data analysis, data visualization, python tools and biology
- Learned various methods of deploying website (AWS, Heroku, Azure, Digital Ocean)

Statistical Report for Production Batches

- Cleaned and visualized data using pandas/matplotlib libraries in Python
- Applied inferential statistics (bootstrapping, correlation, confidence intervals) and descriptive statistics (mean, median, box plots)

Downstream Processes Batch Template

- Used macro-based approach in Excel, Word and VBA
- Created an impurity analysis module and process batch scheduler

Design of Experiments GUI

- Used Openpyxl and Tkinter libraries in Python
- Created choice-based experimental plans for user to select

Productivity Tools

- Created a process chromatogram visualization tool using matplotlib
- Created a categorial Gantt chart and timeline chart using Excel data table

Biology Interactive Content

- Added interactive biology content in Musings in Biology website
- In process of using HTML, CSS, and JavaScript to shift the content on Django website

REFERENCES

Mr. Abhay Desai (+91 97668 60653)

DGM (MSAT), Wockhardt Research Centre, Aurangabad

Mr. Veeramani Kathirvel (+91 84894 50923)

Former Process Engineering Lead, Wockhardt Research Centre, Aurangabad

Zoher Sihorwala (+91 97044 03415, +91 880 500 0670)

Head - Global Regulatory Affairs - Wockhardt Limited

Prof. Banani Chakraborty (+91 87627 15604)

Ramalingaswamy Faculty Fellow, IISc Bangalore

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Portfolio of Projects

Skills

- MS Office Suite
- Python
- Django
- Power BI
- HTML & CSS
- Machine Learning
- Data Visualization
- Data Analysis
- VBA
- LaTeX
- JMP
- Illustrator
- SQL, PostgreSQL

Other Certifications

- LaTeX for Professional Publications