**Prashant Chauhan**

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**SUMMARY**

Detailed oriented Biochemist with expertise in design, formulation and characterization of bio material properties, as well as managing laboratory procedures, testing and quality assurance. Highly experienced in extensive knowledge of pathogens (bacteria), nanomaterials, anti-corrosion coatings, epoxies, and adhesives -method development/validation and providing technical solutions. Adapt at developing and implementing new applications and products demanding strong management and leadership skills. Knowledge of standards, legislation, regulations and by-laws. Persistent development of technical skills and maintains professional relations.

**HIGHLIGHTS**

• 10 years of experience in laboratory management and implementation of laboratory procedures

• 6+ years of Post-doctoral research experience on pathogens- Gram positive (*Staphylococcus aureus*) and Gram negative (*Pseudomonas aeruginosa*) bacteria; anti-cancer treatment; aerobic oxidation processes. Hands on experience on laboratory synthesis, modifications, characterization with standard laboratory testing procedures. Published work in peer reviewed international journals

• Knowledge on Personal protective equipment (PPE)- Classes I-IV

• Familiar with bio safety hazards and biocontainment principles

• 8+ years of experience of managing and leading team

• Instruct, advise and administer staff

• Laboratory Information Management System (LIMS), Good Manufacturing Practices (cGMP)

• Regulatory compliance, documentation, Standard Operating Procedures (SOP’s)

• Experience in grant writing and knowledge of funding sources 10+ years of experience as a chemist in

a research and manufacturing setting

• Experience in handling industrial problems

• Excellent computer skills to prepare technical data reports, publications and presentations. Excellent oral and written communication skills to interact with different types of clients

• Laboratory Analysis-Information and data management tools

**EMPLOYMENT EXPERIENCE**

**Scientist, GreenNano Technologies Inc./ Ford Canada, Toronto, Canada** *Sept 2019- Present* (1 year)

Mitacs Industrial Post Doc- Ford Canada

* Scale up process of production Nanocellulose based products
* Machine installation and commissioning as per plan layout
* Dry/wet run of assembled plant and process optimization
* Research on Personal protective equipment (PPE)- Masks production trials from Nanocellulose
* Developing prototypes for Car parts as requested by clients (Ford Canada)
* Regulatory compliance, documentation, Standard Operating Procedures (SOP’s)
* Prepare technical data reports, publications and presentations
* Laboratory Analysis-Information and data management tools
* Laboratory Information Management System (LIMS), Good Manufacturing Practices (cGMP)

**Professor (Part time), Durham College, Oshawa, Canada** *Jan 2019 – April 2019(4 months)*

* Bio chemistry, Organic Chemistry, Analytical Chemistry, Inorganic chemistry courses
* Teaching modules in delivering hybrid and on-line courses. Extensive experience on demonstration, handling, and scientific usage of different analytical instruments to students.
* Responsible to prepare and mark exams, tests, and assignments of respective courses.
* Conducted office hours and tutorials to answers student questions

**Postdoctoral Research Associate, University of Toronto, Toronto, Canada** *Oct 2014 – Dec 2018 (4 years 3 months)*

* Research on pathogens: Cellulose-nitroaniline nanomaterial for nitro radical photo release and antibacterial action on different Gram positive (Staphylococcus aureus) and Gram negative (Pseudomonas aeruginosa) bacteria
* Research on anticancer treatment Cellulose- bodipy dye nanohybrid for singlet oxygen production
* Research on Aerobic oxidation: Cellulose grafted phthalocyanine as a catalyst for aerobic oxidation of alcohols and alkyl arenes
* Research on Cellulose based materials for smart packaging
* Research on Fabrication and Tailoring of collagen-hydroxyapatite composites
* Research on Cellulose-Metal–organic framework (MOF) composite disc for Gas separation
* Research on Extraction of petroleum products from tree bark and lignin
* Preparation of novel epoxy from starch and vegetable oils
* Development of porphyrin dyes for dye-sensitized solar cells

**Teaching Assistant, University of Toronto, Toronto, Canada**

* CHM231 Inorganic Chemistry Laboratory Sept 2017- Dec 2017
* CHM 243 Organic Chemistry Laboratory II Sept 2016- April 2017
* CHM16C Analytical Chemistry Laboratory Jan 2016- April 2016
* Monitored students in the lab and ensured that students were safely performing the experiments
* Conducted office hours and tutorials to answers student questions
* Provided lecture materials for the students, that would help assist in the lab
* Corrected student’s labs and provided grades

**Postdoctoral Research Associate, Rhodes University, South Africa** *Jan 2014 – Sep 2014 (9 months)*

* Development of nanocellulose film coating for airplane windshield protection.
* Synthesis of phthalocyanine and fluorescent bodipy dyes for solar cells.

**PhD Researcher, University of Padua, Padua, Italy** *Jan 2011 – Dec 2013 (3 years)*

* Preparation of cellulose-porphyrin nanohybrids
* Production of porphyrin chromophores for dye sensitized solar cells
* Preparation of novel porphyrin dyes for determination of the absolute configuration of chiral molecules by circular dichroism

**Quality Analyst/Laboratory Technician, Ekta Scientific Services Co., India** *Apr 2008 – Apr 2009**(1 year and 1 month)*

* Maintained compliance to all QA/QC, health and safety procedure
* Developed and performed programs of analysis to ensure quality control of raw materials, chemical intermediates and final products
* Performed analytical testing, maintenance of approved methods, SOP’s, cGMP and GLP requirements

**EDUCATION**

**University of Padua, Padua, Italy** *Jan 2011 – Dec 2013*

Ph.D.: Organic Chemistry

**University of Delhi, Delhi, India** *Jul 2008 - Jul 2010*

M.Sc.: Organic Chemistry

**University of Delhi, Delhi, India**  *Jul 2005 - Jul 2008*

B.Sc.: Chemistry

**Analytical/Characterization Techniques:** Autoclaving, Preparation of medium, Bacteria growths, NMR spectroscopy, IR spectroscopy, UV-Vis spectroscopy, Fluorescence spectroscopy, high pressure liquid chromatography (HPLC), size exclusion chromatography (SEC), gas chromatography (GC-GC/MS), Mass spectrometry (Maldi, ESI-MS), atomic absorption spectroscopy (AAS), Inductively coupled plasma (ICP-MS /ICP-OES), Thermogravimetric analysis (TGA), differential scanning calorimetry (DSC) , Instron (tensile, compression, fatigue, impact, rheology, and structural testing machines), American Society for Testing and Materials (ASTM), Malvern-shape, size, zeta-potential, Transmission electron microscopy  (TEM), scanning electron microscope (SEM), X-ray diffraction(XRD), High Pressure Power Reactor, Microwave reactor.

**SCIENTIFIC POSITION, COMMUNITY SERVICE, HONOURS AND AWARDS**

* Scientific reviewer for international peer journals: Wiley, RSC and ACS
* Vice Chair of CUPE (Canadian Union of Public Employees) 3902, Unit 5 at University of Toronto
* Mitacs Accelerate Industrial Fellowship, 2019-2021
* Post Doctoral Grant from FCT, Universidade Nova de Lisboa, Portugal (2017-2020)
* Scientific Advisor at NGO: Urban Farming Initiative
* Erasmus Mundus Ph.D. Grant, Italy, Jan 2011- Dec 2013
* Summer Internship Programme, Department of Chemistry National University of Singapore, Singapore, June-July 2009.

**PUBLICATIONS**

• Pratibha Kumari, Niharika Sinha, **Prashant Chauhan** and Shive M.S. Chauhan: Isolation, Synthesis and Biomimetic Reactions of Metalloporphyrinoids in Ionic Liquids; *Current Organic Synthesis,* **2011**, 8, 393-437.

• **Prashant Chauhan**, Caroline Hadad, Andrea Sartorelli, Marco Zarattini, Ana Herreros López, Miriam Mba, Michele Maggini, Maurizio Prato, and Tommaso Carofiglio: Nanocrystalline Cellulose - Porphyrin Hybrids: Synthesis, Supramolecular Properties, and Singlet-Oxygen Production; *Chemm Commun.*, **2013**, 49, 8525-8527.

• **Prashant Chauhan**, Caroline Hadad, Ana Herreros López, Simone Silvestrini, Valeria La Parola, Enrico Frison, Michele Maggini, Maurizio Prato and Tommaso Carofiglio: A Nanocellulose-Dye Conjugate for Multi-Format Optical pH-Sensing; *Chem. Commun.*, **2014**, 50, 9493-9496.

• Pratibha Kumari, Ritika Nagpal, **Prashant Chauhan**, Vinith Yatindranath and Shive M. S. Chauhan Efficient iron(III) porphyrins-catalyzed oxidation of guanidoximes to cyanamides in ionic liquids; *J. Chem. Sci.*, **2015,** 127, 13-18.

• Sohail Ahmad, Kartik Kumar Yadav, Soumee Bhattacharya, **Prashant Chauhan** and Shive Chauhan: Synthesis of 21,23 Selenium and Tellurium substituted 5-Porphomethenes, 5,10Porphodimethenes, 5,15-Porphodimethenes, and Porphotrimethenes and their interactions with mercury; *J. Org. Chem.*, **2015**, 80, 3880-3890.

• **Prashant Chauhan** and Ning Yan: Nanocrystalline cellulose grafted phthalocyanine: a heterogeneous catalyst for selective aerobic oxidation of alcohols and alkyl arenes at room temperature in green solvent; *RSC Adv.*, **2015**, 5, 37517-37520.

• **Prashant Chauhan** and Ning Yan: Novel bodipy—cellulose nanohybrids for production of singlet oxygen; *RSC Adv.*, **2016**, 6, 32070-32073.

• **Prashant Chauhan**, Kenneth Chu, Ning Yan and Zhifeng Ding: Comparison study of electrochemiluminescence of boron-dipyrromethene (BODIPY) dyes in aprotic and aqueous solutions; *J. Electroanal. Chem.*, **2016**, 781, 181-189.

• Smriti Arora, Ritika Nagpal, **Prashant Chauhan** and Shive Murat Singh Chauhan: Triazole linked Ruthenium(II) porphyrin: Influence of connectivity pattern on photophysical and electrochemical properties; *New J. Chem.*, **2016**, 40, 8878-8885.

• P. Linga Reddy, Racha Arundhathi, Mohit Tripathi, **Prashant Chauhan**, Ning Yan and Diwan S. Rawat Solvent free Oxidative Synthesis of 2-Substituted Benzimidazoles by Immobilized Cobalt Oxide Nanoparticles on Alumina/Silica support, *Chem. Select*, **2017**, 2, 3889-3895.

• **Prashant Chauhan** and Ning Yan: Novel nitroaniline-cellulose nanohybrids: nitro radical photorelease and its antibacterial action, *Carbo. Poly.*, **2017**, 174, 1106-1113.

• Heyu Chen, Sandeep S. Nair, **Prashant Chauhan** and Ning Yan: Lignin containing cellulose nanofibril application in pMDI wood adhesives: mechanical properties, curing kinetics and bondline interfaces*, Chem. Eng. J.,* **2019**, 360, 393-40.

• **Prashant Chauhan**, Heyu Chen, Shreshtha Roy Goswami and Ning Yan: Improved mechanical properties of flexible bio-based polymeric materials derived from epoxy mono/di- abietic acid and soyabean oil *Industrial crops and products,* **2019**, 138, 111437.

• Shrestha Roy Goswami, Sen Wang, Pitchaimari Gnanasekar, **Prashant Chauhan** and Ning Yan: Catalyst-free esterification of high amylose starch with maleic anhydride in 1-butyl-3-methylimidazolium chloride: The effect of amylose content on the degree of MA substitution *Carbo. Poly.*, **2020**, 234, 115892.

• **Prashant Chauhan**; Ruizhong Zhang; Yichen Tao; Angel Zhang; Martin J. Stillman; Ning Yan; Zhifeng Ding, Electrochemiluminescence of A Kite-tailed Zinc(II) Porphyrin, *Euro Chem J*. **2020** Under Review

• **Prashant Chauhan**, Ruizhong Zhang, Angel Angel, Martin Stillman, Martin, Ning Yan and Zhifeng Ding: Enhancing Tetraphenylporphyrin Electrochemiluminescence by Means of π-Extended and Symmetry breaking “Kite Tail”, *J. Mat. Chem. C.*, **2020** Under Review

• **Prashant Chauhan**, Heyu Chen, and Ning Yan: Barking” up the right tree: biorefinery from waste stream to cyclic carbonate with immobilization of CO2 for non-isocyanate polyurethanes, *Green Chem.*, **2020** Under Review

• Sandeep Nair, Wenbio Xu, **Prashant Chauhan**, Heyu Chen, and Ning Yan: Lignin as a key component in lignin-containing cellulose nanofibrils for enhancing the performance of pMDI wood adhesives, *ACS Sustainable Chemistry & Engineering*, **2020** Under Review