Dr. Amandeep Jindal

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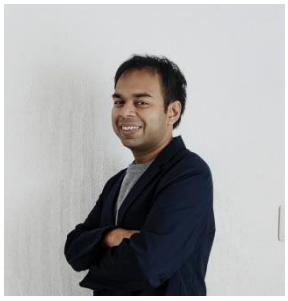

PROFESSIONAL EXPERIENCE

Assistant Professor| July 2024-Till Date
Department of Chemical Engineering, IIT Kharagpur, W.B., India

Tech. Leader – Material Scientist| December 2023 - May 2024 (Industry)
Nicoya Lifesciences, Kitchener, Canada

Project Manager – Product Development Researcher | April 2020 - December 2023 (Industry)
AGC Inc. (Asahi Group Company), Yokohama, Japan (Producer of FLEMION® and CYTOP®)

Postdoctoral Researcher| September 2017 – March 2020
Faculty of Pure and Applied Sciences, University of Tsukuba, Japan

Visiting Researcher| September 2017 – March 2020
National Institute of Materials Science (NIMS) Japan

Research Associate| December 2016 – June 2017
Department of Chemical Engineering, IIT Delhi, New Delhi, India

EDUCATIONAL & TECHNICAL QUALIFICATION

Educational qualification	Year	Board/Institution
Ph. D. (Chemical Engineering)	2012-2017	IIT Delhi, India
MS (Research), converted to Ph.D. (Chemical Engineering)	2011-2012, converted to Ph.D. in 2012	IIT Delhi, India
B. Tech. (Chemical Engineering)	2006-2010	NIT Warangal, India

Ph. D. THESIS TOPIC

Development of electrospun carbon nitride-based nanofibers as oxygen reduction catalysts for microfluidic fuel cells under the supervision of **Prof. Suddhasatwa Basu**, IIT Delhi, India.

PATENTS

1. **Japan patent number: 7207658**, filed on 2023.01.10; Application No. 2019-139715, applied on 2019.07.30; Complex of platinum nanoparticles and peptide carriers and their production (Fuel Cell Application); Organizations: NIMS; University of Tsukuba

2. ***World Intellectual Property Organization*** **(WIPO)** published patent- **WO 2024/176713**, Published on 2024.08.29; Microfluidic device and production method therefor (Biochip applications); Organization: AGC Inc., Japan

3. ***World Intellectual Property Organization*** **(WIPO)** published patent- **WO 2022/270457**, Published on 2022.12.29; Powder coating composition, method for producing coated article, and coated article (Fluoropolymer Coating Applications); Organization: AGC Inc., Japan

BOOK CHAPTER

Amandeep Jindal, Alisha Yadav and Misti Das; Materials for energy storage in batteries; in Materials for Boosting Energy Storage: Recent Advances and Applications in Sustainable Energy Technologies; ACS Books; *Accepted in August 2024*

PUBLICATIONS

1. Cover Page: Sindhu Pillai, Ankita Borah, Amandeep Jindal, Eden Jacob, Yohei Yamamoto, Sakthi Kumar, BioPerine Encapsulated Nanoparticles for Overcoming Drug-Resistant Breast Cancers, Asian Journal of Pharmaceutical Sciences, Elsevier, 2020, 15, 701-712, DOI: 10.1016/j.ajps.2020.04.001

2. Cover Page: Eden Mariam Jacob, Ankita Borah, Amandeep Jindal, Sindhu C. Pillai, Yohei Yamamoto, Toru Maekawa, D. Sakthi Kumar, Synthesis and Characterization of Citrus-derived Pectin nanoparticles based on their degree of esterification, Journal of Materials Research, Cambridge University Press, 2020, 35, 1514-1522, DOI: 10.1557/jmr.2020.108

3. Amandeep Jindal, Kentaro Tashiro, Hiroaki Kotani, Toshiaki Takei, Sven Reichenberger, Galina Marzun, Stephan Barcikowski, Takahiko Kojima, Yohei Yamamoto, Excellent Oxygen Reduction Reaction Performance in Self-Assembled Amyloid-β / Platinum Nanoparticle Hybrids with Effective Platinum Nitrogen Bond Formation, ACS Applied Energy Materials, American Chemical Society, 2019, 2, 6536-6541, DOI: 10.1021/acsaem.9b01103

4. Amandeep Jindal, Hiroaki Kotani, Soh Kushida, Akinori Saeki, Takahiko Kojima and Yohei Yamamoto, Significant Enhancement of Hole Transport Ability in Conjugated Polymer/Fullerene Bulk Heterojunction Microspheres, ACS Applied Polymer Materials, American Chemical Society, 2019, 1, 118-123, DOI: 10.1021/acsapm.8b00170

5. Amandeep Jindal, Suddhasatwa Basu, Neha Chauhan, Tomofumi Ukai, Sakthi Kumar and Samudyatha Shweta, Application of electrospun CNx nanofibers as cathode in microfluidic fuel cell, Journal of Power Sources, Elsevier, 2017, 342, 165-174, DOI: 10.1016/j.jpowsour.2016.12.047

6. Back Cover Page: Amandeep Jindal, Harikrishnan N and Suddhasatwa Basu, Direct formic acid PEM fuel cell with electrospun carbon nitride nanofibers as catalyst, Fuel Cells, Wiley, 2017, 17, 407-411, DOI: 10.1002/fuce.201600209

7. Arabinda Baruah, Amandeep Jindal, Chayakant Acharya, Bhanu Prakash, Suddhasatwa Basu and Ashok K. Ganguli, Microfluidic reactors for the morphology controlled synthesis and photocatalytic study of ZnO nanostructures, Journal of Micromechanics and Microengineering, IOP Science, 2017, 27, 03503, DOI: 10.1088/1361-6439/aa5bc4

8. Amandeep Jindal, Deepak Kumar Gautam and Suddhasatwa Basu, Electrocatalytic activity of electrospun carbon nitride-polyacrylonitrile nanofibers towards oxygen reduction reactions, Journal of Electroanalytical Chemistry, Elsevier, 2016, 775, 198-204, DOI: 10.1016/j.jelechem.2016.05.051

9. Amandeep Jindal and Suddhasatwa Basu, Improvement in Electrocatalytic Activity of Oxygen Reduction Reaction of Electrospun Carbon Nitride /Polyacrylonitrile Nanofibers by Addition of Carbon Black and Nafion® Fillers, International Journal of Hydrogen Energy, Elsevier, 2016, 41, 11624-11633, DOI: 10.1016/j.ijhydene.2016.02.136

10. Amandeep Jindal, Suddhasatwa Basu and Aby C. P., Electrospun carbon nitride supported on PVA as an electrocatalyst for oxygen reduction reactions; RSC Advances, Royal Society of Chemistry, 2015, 5, 69378-69387, DOI: 10.1039/C5RA10884E

RECENT INVITED TALKS

- Hydrogen center, UQTR Trois-Riviers, Canada; 29 May 2025
- Chemical Engineering, IIT Delhi; 25 April 2025
- School of Bioengineering and Biosciences, IIT Mandi - 19 Feb 2025
- GCDEM 2024, NTU Singapore; 26-30 November, 2024
- RTEEA-2024; NIT Hamirpur; 19-23 August, 2024
- Lab-on-a-Chip and Microfluidics Asia, Nikko Narita, Japan; 5-6 October, 2023

Teaching experience

- Courses: Biochemical Engineering, Optimization Techniques in Process Design, Mechanical Operations, Process Equipment Design, Fuel Lab, Mechanical Operations Lab, Mass Transfer Lab, Chemical Reaction Engineering Lab

MAJOR CONFERENCES

1. **Invited Talk**: Electrocatalyst Energy Materials and Microfluidics for Fuel Cell Applications; *Recent Trends in Energy and Environmental Engineering Applications RTEEA-2024*; Department of Chemical Engineering; NIT Hamirpur; 19-23 August, 2024
2. **Invited Talk**: CYTOP® Fluoropolymer Hydrophobic Coatings for Digital Microfluidics and Biochip Application; *Lab-on-a-Chip and Microfluidics Asia 2023*; October 5-6, 2023; Nikko Narita, Japan
3. Amandeep Jindal, Kentaro Tashiro, Hiroaki Kotani, Toshiaki Takei, Sven Reichenberger, Galina Marzun, Stephan Barcikowski, Takahiko Kojima, Yohei Yamamoto, Self-Assembled Amyloid-β/Platinum Nanoparticle Hybrids with Effective Platinum-Nitrogen Bond for Energy Applications, CEMS International Symposium on Supramolecular Chemistry and Functional Materials (CEMSUPRA), Ito Hall, The University of Tokyo, 9-10 Dec 2019, RIKEN Center for Emergent Matter Science, Japan, 78 (Poster)
4. Amandeep Jindal, Self-Assembled Amyloid-β peptides for Electrocatalytic ORR Applications, 2nd Glowing Polymer Symposium, Tokyo University of Science, 30 Nov 2019, Polymer Society Japan, Kanto Branch, A06 (Oral)
5. Amandeep Jindal, Kentaro Tashiro, Hiroaki Kotani, Toshiaki Takei, Sven Reichenberger, Galina Marzun, Stephan Barcikowski, Takahiko Kojima, Yohei Yamamoto, Conjugated Polymers and Peptides for Energy Applications, 34 Society of Polymer Science Japan (SPSJ) exchange meeting, Tsukuba Seminar House, Ibaraki, Japan, 31 Oct -2 Nov 2019, SPSJ Kanto Branch Ibaraki Area Japan, 23 (Poster)

6. Amandeep Jindal, Conjugated Polymers & Peptides for Energy App, Inst of Polymer Science Kanto Branch Research Exch. Mtg, Oct 2019 (Poster)
7. Amandeep Jindal, Hiroaki Kotani, Soh Kushida, Akinori Saeki, Takahiko Kojima and Yohei Yamamoto, Self-assembly of Conjugated Polymers and Peptides for Energy Applications Using Electrochemistry, 7th International Symposium on π-System Figuration, Toyonaka Campus, Osaka University, Japan 29-30 March 2019, π-System Figuration, MEXT, Japan, 53 (Poster)
8. Amandeep Jindal, Enhanced hole hopping ability in conjugated polymer/fullerene bulk heterojunction microspheres for electrocatalytic applications. 1st Glowing Polymer Symposium, Waseda University, Japan, 15 Dec 2018, Polymer Society Japan, Kanto Branch, C16 (Oral)
9. Amandeep Jindal, Hiroaki Kotani, Soh Kushida, Akinori Saeki, Takahiko Kojima and Yohei Yamamoto, Hole hopping ability enhancement in conjugated polymer/fullerene bulk heterojunction microspheres, 33 Society of Polymer Science Japan (SPSJ) exchange meeting, Tsukuba Seminar House, Ibaraki, Japan, 1-2 Nov 2018, SPSJ Kanto Branch Ibaraki Area Japan, 20 (Poster)
10. Amandeep Jindal, Significant Enhancement of Hole Hopping Ability in Conjugated Polymer / Fullerene Bulk Heterojunction Microsphere, π Modeling Young Association, Gamagori, Aichi, Oct 2018 (Poster)
11. Amandeep Jindal, Hiroaki Kotani, Soh Kushida, Akinori Saeki, Takahiko Kojima and Yohei Yamamoto, Enhancement of hole hopping ability in conjugated polymer/fullerene bulk heterojunction microspheres. 67th Symposium on Macromolecules, Sapporo Campus, Hokkaido University, Japan, 12-14 Sept 2018, Society of Polymer Science, Japan (SPSJ), 104 (Oral)
12. Amandeep Jindal, Suddhasatwa Basu, Neha Chauhan, Tomofumi Ukai and Sakthi Kumar, Carbon nitride/polyacrylonitrile nanofibers as effective cathode catalyst in microfluidic fuel cells, 66th Annual conference of Polymer Science Association, Nagoya International Conference Hall, Nagoya, Japan, 23- 25 May 2018, Society of Polymer Science, Japan (SPSJ), 41 (Poster)
13. Amandeep Jindal, Suddhasatwa Basu, Neha Chauhan, Tomofumi Ukai and Sakthi Kumar, Microfluidic Fuel Cell Fabrication with Non-Precious Carbon Nitride Nanofibers as Cathode Catalyst, 98th CSJ Annual Meeting, College of Science and Technology, Nihon University, Japan 20-23 March 2018, Chemical Society of Japan (CSJ), 13 (Poster)
14. Amandeep Jindal, Suddhasatwa Basu, Neha Chauhan, Tomofumi Ukai, Sakthi Kumar and Yohei Yamamoto, Microfluidic Fuel Cell Fabrication with Non-Precious Carbon Nitride Nanofibers as Cathode Catalyst, University of Tsukuba Research Center for Materials Research (TREMS) Joint Symposium, University of Tsukuba, 8-9 March 2018, jointly by TREMS, University of Tsukuba; Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Germany and National Tsing Hua University, 26 (Poster)
15. Amandeep Jindal, Design and fabrication of microfluidic fuel cell. National Symposium on Nano Science and Technology, Center for Nano Science and Engineering (CeNSE), Indian Institute of Science (IISc) Bangalore, 29-30 June, 2016, Indian Nanoelectronics Users Programme (INUP), CeNSE (Oral)
16. Amandeep Jindal, Suddhasatwa Basu, Neha Chauhan, Tomofumi Ukai, Yoshitake Nakajima and Sakthi Kumar, Electrospun Carbon Nitride Supported on Polyacrylonitrile as an Electrocatalyst For Oxygen Reduction Reaction, 13th International Symposium on Bioscience and Nanotechnology, Bio-Nano Electronics Research Centre, Toyo University, Japan, Nov 2015 (Poster)
17. Amandeep Jindal, Deepak Gautam and Suddhasatwa Basu, Synthesis of carbon nitride/PAN nanofibers using electrospinning as effective non-Pt catalyst for ORR in fuel cells, 6th International

conference on advanced nanomaterials, ANM 2015 Conference, University of Aveiro, Portugal, July 2015, 49 (Oral)

18. Amandeep Jindal, Deepak Gautam and Suddhasatwa Basu, Electrocatalytic activity of electrospun carbon nitride nanofibers on different supporting polymers for ORR in fuel cells, International Conference on Nanotechnology, Nanomaterials & Thin Films for Energy Applications, Manchester, UK, June 2015, 119 (Oral)
19. Amandeep Jindal and Suddhasatwa Basu. Development of carbon nitride/PVA nanofibers using electrospinning for oxygen reduction reaction in fuel cells, International Conference on Electrochemical Science and Technology, ICONEST – 2014, 7-9th August 2014, Electrochemical Society of India (ECSI), IISc Bengaluru, India, 105 (Oral)
20. **Best Poster Award**: Amandeep Jindal, Tomofumi Ukai, Sakthi Kumar, Toru Maekawa and Suddhasatwa Basu, Design and fabrication of 3-dimensional membraneless micro fuel cells, International Conference on Electrochemical Science and Technology, ICONEST – 2014, 7-9th August 2014, Electrochemical Society of India (ECSI), IISc Bangalore, 166
21. **Third Prize:** Amandeep Jindal, Development of Carbon Nitride Nanofibers and its Application for ORR in Fuel Cells, Open house 2013, IIT Delhi
22. Amandeep Jindal and Suddhasatwa Basu, Preparation and characterization of carbon nitride nanofibers and its application for oxygen reduction reaction in micro fuel cells, Icon-Nano 2013, International Conference on Surface science and nanotechnology, Faculty of Pharmacy and Shah-Schulman centre for surface science and nanotechnology, Dharmsinh Desai University, College road, Nadiad-387001, Gujarat, 41-42 (Oral)
23. Amandeep Jindal, Tomofumi Ukai, Sakthi Kumar, Toru Maekawa, Suddhasatwa Basu, Development of carbon nitride nanofibers and its application for oxygen reduction reaction in 3-dimensional membraneless micro fuel cells, 11th International Symposium on Bioscience and Nanotechnology 2013, Inoue Enryo Hall, Hakusan Campus, Toyo University organized by Bio-Nano Electronics Research Centre, Toyo University and Graduate School of Interdisciplinary New Science, Toyo University (Poster)
24. Amandeep Jindal and Suddhasatwa Basu, Preparation and chemical characterization of carbon nitride for generation of nanofibers using electrospinning technique, 3rd EICOON SCHOOL on Science and Technology of Renewable and Clean Energy Sources, Hotel ITC SONAR, Kolkata, India, April 30 – May 1, 2012, jointly by CSIR-Central Glass and Ceramic Research Institute and SN Bose National Central for Basic Sciences, Kolkata, 108 (Poster)

ACADEMIC SERVICE & STUDENT WELFARE

- Faculty Advisor, M.Tech. (2024-2026), Chemical Engineering, IIT Kharagpur