Dr. Poonam Sundriyal

Personal Information

Name: **Poonam Sundriyal**
Qualification: Ph.D.
Current position: Assistant Professor Grade II, IIT Kharagpur, West Bengal, India, 721302
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Educational Background

Year	Degree	Specialization	University
2020	Ph. D.	Mechanical Engineering (Manufacturing)	Indian Institute of Technology Kanpur, India
2013	M. Tech.	Mechanical Engineering (Design and Production)	GB Pant University of Agriculture and Technology, India
2011	B. Tech.	Mechanical Engineering	Uttarakhand Technical University, India

Research Interest

1. **Additive manufacturing.**
2. **Surface engineering.**
3. **Inkjet printing.**
4. **Supercapacitors and batteries**
5. **Flexible and wearable electronics.**

Professional Experience

1. Assistant Professor, IIT Kharagpur, West Bengal: August 2021 to Present
2. Assistant Professor, IIT (BHU), Varanasi: April 2021 to July 2021
3. Project Scientist, TCIP Co. (Start-up), Kanpur: July 2020 to April 2021.
4. Project Scientist, IIT Kanpur: November 2019 to July 2020.
5. Assistant Professor, Mechanical Engineering Department, IFTM University, Moradabad, Uttar Pradesh, India: June 2013 to May 2014.

List of Publications

Journal papers

1. **Sundriyal, P.**, & Bhattacharya, S. (2017). Inkjet-printed electrodes on A4 paper substrates for low-cost, disposable, and flexible asymmetric supercapacitors. ***ACS Applied Materials & Interfaces***, 9(44), 38507-38521.
2. **Sundriyal, P.**, & Bhattacharya, S. (2019). Scalable Micro-fabrication of Flexible, Solid-State, Inexpensive, and High-Performance Planar Micro-supercapacitors through Inkjet Printing. ***ACS Applied Energy Materials***, 2(3), 1876-1890.
3. **Sundriyal, P.**, & Bhattacharya, S. (2020). Textile-based hybrid supercapacitors for flexible and wearable electronics applications, ***Scientific Reports***, 10(1), 1-15.
4. **Sundriyal, P.**, & Bhattacharya, S. (2017). Polyaniline silver nanoparticle coffee waste extracted porous graphene oxide nanocomposite structures as novel electrode material for rechargeable batteries. ***Materials Research Express***, 4(3), 035501.
5. **Sundriyal, P.**, Sahu, M., Prakash, O., & Bhattacharya, S. (2021). Long-term Surface Modification of PEEK polymer using Plasma and PEG Silane Treatment. ***Surfaces and Interfaces***, 101253.
6. **Sundriyal, P.**, Pandey, M., & Bhattacharya, S. (2020). Plasma-assisted surface alteration of industrial polymers for improved adhesive bonding. ***International Journal of Adhesion and Adhesives***, 102626.
7. **Sundriyal, P.**, & Sah, P. L. (2017). Enhancement of mechanical properties of graphite particulate aluminum metal matrix composites by magnesium addition. ***Materials Today: Proceedings***, 4(9), 9481-9486.
8. Patel, V. K., **Sundriyal, P.**, & Bhattacharya, S. (2017). Aloe vera vs. poly (ethylene) glycol-based synthesis and relative catalytic activity investigations of ZnO nanorods in thermal decomposition of potassium perchlorate. ***Particulate Science and Technology***, 35(3), 361-368.
9. Gupta, A., **Sundriyal, P.**, Basu, A., Manoharan, K., Kant, R., & Bhattacharya, S. (2019). Nano-finishing of MEMS-based platforms for optimum optical sensing. ***Journal of Micromanufacturing***, 2516598419862676.
10. Yardi, S., Gupta, A., **Sundriyal, P.**, Bhatt, G., Kant, R., Boolchandani, D., & Bhattacharya, S. (2016). High efficiency coupling of optical fibres with SU8 micro-droplet using laser welding process. ***Lasers in Manufacturing and Materials Processing***, 3(3), 141-157.

Patent

1. **'Method for Enhanced Bonding of Thermoplastic Composites using Interface Modification'. US patent, 2021 (Filed from Boeing: Boeing 18-3795-US-NP).**

Book

1. 'Carbon-based Nanostructures for Energy Harvesting Applications', American Physical Society, October 2021.

Conferences

1. **Sundriyal, P.**, and Bhattacharya, S. (2019). Electrochemical analysis of the printed $NiCo_2O_4$//reduced graphene oxide solid-state hybrid supercapacitors on fabric substrates for wearable applications. 235th ECS meeting, USA.
2. **Sundriyal, P.**, and Bhattacharya S. (2019). Printing of shape and size versatile electrodes on paper/ fabric substrates for thin and flexible battery- supercapacitor hybrid energy storage systems. 3rd International Conference on Applied Surface Science, Pisa, Italy.
3. **Sundriyal, P.**, and Bhattacharya, S. (2019). ***Invited***. 3-D printed electrode materials for low-cost, flexible, and stretchable energy storage devices. 236th ECS meeting, USA.
4. **Sundriyal, P.**, and Bhattacharya S. (2018). Inkjet printing based micro-manufacturing of the thin-film electrodes for flexible supercapacitor applications. AIMTDR, India.

Awards

1. **"Symposium Grant Award"** in the Battery and Energy Technology Joint General Session in the **ECS 235th meeting**, May 2019, Dallas, USA.
2. **"Outstanding Ph.D. Thesis Award, 2020"** of Indian Institute of Technology, Kanpur.
3. **"PhD Thesis Award, 2020"** of Institute of Smart Structures and Systems, IISC Bangalore.
4. **"Best Ph.D. Thesis Award, 2020"** of International Society of Energy, Environment, and Sustainability.
5. **"Lalit Kishore Choudhary Memorial Award, 2018"** of Department of Mechanical Engineering, IIT Kanpur.
6. **"National Talent Search Award, 2003"** of Govt. of India.