**Hem Raj Pant,** *PhD*

*Professor*

*Bionano-System Engineering*

***Nano Materials Lab***

***Materials Science & Engineering Program***

***Departement of Applied Sciences and Chemical Engineering***

**Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal**

**Email ; hempant@ioe.edu.np**

**Phone; 9851178292, 5219559, 5543072**

**Education &Training**

**Postdoc.** *Materials Sci. and Eng.,* 2011-2013, Chonbuk Nattional University, Korea

**Ph. D.** *Bio-nano System Engineereing,* 2011, Chonbuk National University, Korea

**M. Sc.** *Chemistry,* Central Dept. of Chemistry, 1995, Tribhuvan University, Nepal

**B. Sc.** *Basic Science*, Amrit Science Campus, 1993, Tribhuvan University, Nepal

**Positions & Employment**

2019 - **Professor**, Institute of Engineering, Tribhuvan University, Nepal

2022- **Head of Department**, Department of Applied Sciences & Chemical

Engineering, Institute of Engineering, Tribhuvan University, Nepal

2020- **Chairman**, Student Selection Committee, Pulchowk Campus, IOE, TU

2020-2022 **Coordinator**, M.Sc Materials Science & Eng. Program, IOE, TU

2018- 2019 **Visiting Researcher & Academic Consultant**, King Abdullah University of

Science and Technology (KAUST), Saudi Arabia

2013- 2015 **Research Professor**, Bio-nano System Engineering, Chonbuk Nat. Univ., Korea

2010- 2011 **Teaching Assistant**, Bio-nano System Engineering, Chonbuk Nat. Univ., Korea

2012- 2019 **Associate Professor**, Institute of Engineering, Tribhuvan University, Nepal.

2001- 012 **Lecturer**, Institute of Engineering, Tribhuvan University, Nepal.

2004-2009 **Chairman**, Chemistry Inst. Comm., IOE, Tribhuvan University, Nepal.

1998-2000 **Lecturer,** Kathmandu Eng. College, Tribhuvan University, Nepal.

1996-1998 **Chemist**, Herbs production and Processing Co. Ltd., Kathmandu, Nepal.

**Scientific Achievements**

Number of *SCI Journal Articles*; 74

Number of *SCIE Journal Articles*; 12

Number of *Conference Proceeding*; 49

Number of Books; 14

Number of *Patents*; 1

Number of *1st author Articles*; 31

Number of *Corresponding Author Articles*; 29

Accumulated Impact factor; 396

*Total Citations*; 5150

*h-index*; 42

*i10-index*; 75

* **Among the TOP 2% CITED** scientist in the world, according to 2021/2022/2023 *Stanford University, USA,* publication

(https //elsevier.digitalcommonsdata.com/ datasets/ btchxktzyw /2? fbclid =IwAR2XZi 9lx

ZJa6 OpscTNM58qj30wNiiehrCKxRSwk9UAduG1XfOscJTy9aNY)

* **Top most SCHOLAR from TU Nepal according to AD Scientific Index, 2021,2022 & 2023** (<https://scholar.google.com/citations?hl=en&view_op=search_authors&mauthors=>

tribhuvan +university+nepal&btnG=) (<https://www.adscientificindex.com/scientist/hem-raj-pant/395555>)

**RESEARCH INTREST**

Nano-fabrication of biocompatible and functional polymers; Modification and processing of natural and synthetic polymer; Polymer composite for water filtration and tissue regeneration; Graphene, ceramic and metallic nanocomposite for photocatalyst; Physico- and bio-chemical properties of fiber coated nonvascular stent and polymeric artificial nerve guide; Arsenic adsorption using composite of Fe3O4 with graphene or natural available waste materials (sugarcane bagasse, fly ash, red mud, fire burnt wood coal)

**CURRENT RESEARCH**

* Preparation of spider-web-like nanofibrous mats of different polymers for different applications
* Fabrication of 3-D tissue scaffolds from electrospun nanomembrane
* Preparation of photocatalytic and antimicrobial nanofiber mats for water filtration
* Modification of polymeric nano materials for drug delivery and tissue scaffold
* Preparation of artificial Nerve tubes from biodegradable polymers (PLLA, PLCL, PLGA, PCL)
* Nonvascular stent coating technology using electrospun fibers
* Metal or metal oxide nanocomposite with graphene for water treatment
* Characterization of materials by; 1H-NMR, 13CNMR, FT-IR, FT-Raman, GPC, TGA, DSC, DLS, ELS, AFM, BET, TEM, XRD, PL, Uv-visible, and Mechanical strength

**PROFESSIONAL EXPERIENCE**

**Department of Bio-nano System Engineering, Chonbuk National University, South Korea**

* Teaching Fiber Engineering and Biomaterials to the graduate students (September 2013- March 2015)

**Material Science and Engineering Program (Graduate School), Institute of Engineering, Tribhuvan University, Kathmandu, Nepal**

* Teaching Materials Processing, Biomaterilas and Research Methodology to graduate student (September, 2016- )

**Department of Chemistry, Institute of Engineering, Tribhuvan University, Kathmandu, Nepal**

* Teaching Engineering Chemistry to university level students (permanent faculty from May 2001- )

**Kathmandu Engineering College, Kathmandu, Nepal**

* Teaching Engineering Chemistry to undergraduate students (December 1998- May 2001)

**Herbs production and Processing Co. Ltd., Kathmandu, Nepal**

* Chemist, analysis and quality control of different natural herbal product of Nepal (July 1996- November 1998)

**HONORS/SCHOLAR/LEADERSHIP ACTIVITIES**

**Honors and Awards**

* Nepal Bidhya Bhusan from Honorable President of Nepal (Government of Nepal in 2015)
* Nepal Technology Award from Honorable Prime minister of Nepal (Nepal Academy of Science and Technology, Government of Nepal in 2018)
* Listed in Marquis Who’s Who in the World 31st Edition, 2014.
* Different Honors from Prasansa Sanrachen Samuha
* Honors from TUTA , Pulchowk Campus, IOE, TU.
* Honors from SONSIK and Nepal Embassy of South Korea.
* Ph.D. Research Fellowship from Healthcare Development Project, Ministry of Education, South Korea (September 2009 - 2011)
* Foreign professor scholarship from Chonbuk National University Korea (March 2010- December 2010)

**Organization Fellow/Member/Leader**

• Fellow of The World Academy of Science (TWAS)

• Life Member, Nepal Chemical Society

• Member, Korean Polymer Society

• Member, Korean Fiber Society

• Member, American Chemical Society

• Vice President, IEEE, EDS, Nepal Chapter

• Founder General Secretary, Prasansa Sanrachen Samuha (NCSC group), Nepal

• Founder Chairman, Research Institute for Next Generation (RING), Nepal

• Chairman, Korean University Alumina Association Nepal (KUAAN)

• Chairman, Bagmati Community Campus, Tribhuvan University, Nepal,

• Chairman, Tribhuvan University Professor’s Association, Pulchowk Campus Unit,

**Editor in Chief**

Journal of the Institute of Engineering (JIE) (Nepjol)

**Editor in International Journals**

• Journal of Materials Science and Engineering

• Journal of Biomaterials, Frontiers in Materials

• Frontiers in Ecology and Evolution

• Molecules, MDPI

• Chemical Engineering Communication, Taylor and Francis

**Conference organizer and section chair**

• Organizing member of “The 8th Asian Conference on Colloid and Interface

Science (ACCIS 2019)”, Kathmandu, Nepal

• Section Chair of “International Conference on Recent Innovation in Engineering

and Technology-20 (ICRIET, 2020)”, Pune, India

• Section Chair of “5th International Conference on Advanced Engineering and

ICT-Convergence 2020 (ICAEIC-2020), South Korea • Section Chair of “6th International Conference on Advanced Engineering and

ICT-Convergence 2021 (ICAEIC-2021), South Korea • Section Chair of “9th National Conference on Science and Technology, Academy

of Science and Technology (NCST-2022), Kathmandu, Nepal

**Reviewer in International Journals**

• Journal of Hazardous Materials

• ACS Biomacromolecules

• ACS Omega

• RSC Advances

• Chemical Engineering Journal

• Journal of Biomedical Materials Research: Part A.

• Materials Letters

• Journal of the American Ceramic Society

• Composite Science and Technology

• Composite Part B: engineering

• Materialstoday Communication

• Applied Surface Science

• Materials Science & Engineering B

• Materials Science & Engineering C

• Colloids and Surfaces A: Physicochemical and Engineering Aspect

• Textile Research Journal

• Material Research Bulletin

• Journal of Alloys and Compounds

• Materials and Technology

• Journal of Saudi Chemical Society

• Current Catalysis

• Journal of Nanoparticles

• Biotechnology and Bioengineering

• Fibers and Polymers

• Chemical Engineering Research and Design

• Journal of Bioactive and Compatible Polymers

**Academic course design**

* Biomaterials & safety, M. Sc third semester.
* Materials Processing, M. Sc second semester.
* Program course development of BE in Chemical Engineering
* Basic Physical Chemistry, BE, Chemical Engineering
* Nanotechnology, BE, Chemical Engineering

**Traning/Workshop/Short-term Scholar visit**

* Participated to two weeks workshop on Southeast Asia International Joint-Research and Training Program on Environmentally Green Technology and Sustainable Energy: Water-Energy Nexus, National Tsing Hua University, Taiwan, November 4-16, 2019.
* Participated to the one month training on Environmental Impact Assessment organized by SchEME, Pokhara University, Kathmandu, Nepal (1, November 1998 – 30, December 1998)
* Research done on Swertia Chirata under the supervision of Prof. Mangala Devi Manandhar for isolation and identification of Amerogentin compound since November 9 -1997 to January 15-1998
* Participated on seven days teacher’s training conducted by Kathmandu Engineering College, Nepal (1-7 March 1999)
* Visiting Scholar at National Tsing Hua University, Taiwan (5-16 November, 2019)
* Visiting Scholar at Indian Institute of Technology, Roorkee, India (15-21 Jun, 2022)
* Visiting Scholar at Jeonbuk National University, South Korea (16-24 August, 2022)

**Patents**

1. Ki Taek Nam, R. Nirmala, **Hem Raj Pant**, Hak Young Kim, Electrospinning device comprising polygon tubes, Korean Patent 10-2010-0125589 (2010-12-09). WO/2013/094788 (publication date; 27.06.2013).

**PROJECTS**

1. **Principal Investigator (PI)**

**Project title:** “Synthesis of Rare Earth Element doped ZIF-67 derived N-Doped CNT interconnected conductive porous carbon from biobased Hemp hurd Powder”.

**Funding Agent**: United State Air Force Office of Scientific Research

**Submitted**: April, 2023

**Period**: September 15th, 2023- September 14th, 2025

**Project No.:** FA2386-23-1-4080

1. **Principal Investigator (PI)**

**Project title:** “Azolla derived Hierarchical zinc Oxide activated Carbon Nano composite: from eco-environmental agro Product concern to Industrial opportunity”.

**Funding Agent**: University Grant Commission, Nepal

**Submitted**: January, 2023

**Period**: May 1st , 2023- April 30, 2026

**Project No.:** CRIJ-78/79-S&T-06

1. **Principal Investigator (PI)**

**Project title:** “Nano-Architecture Metal-Organic Frameworks (MOFs) on Nepali Paper for Environmental remediation and Green Energy Applications”.

**Funding Agent**: Research Division, Tribhuvan University, Nepal

**Submitted**: March, 2023

**Period**: April 1st , 2023- March 30, 2026

**Project No.:** TU-Er01

1. **Principal Investigator (PI)**

**Project title:** “Essential oils incorporated electrospun nanofibrous membrane”.

**Funding Agent**: Ministry of Education & Science and Technology, Nepal

**Submitted**: January, 2023

**Period**: January 15, 2023- August 15, 2023

**Project No.:** MOE/Eng01

1. **Principal Investigator (PI)**

**Project title:** “Electrospun Nanofibrous Membrane of Polyacrylonitrile (PAN) Decorated with Ag Nanospecies for Water Purification”.

**Funding Agent**: ICE-Matter/JICA

**Submitted**: March, 2021

**Period**: September 24, 2021- August 30, 2022

**Project No.:** ICE-Matter-KU-TU CR2021

1. **Principal Investigator (PI)**

**Project title:** “Establishment of Green Nanomaterials Lab at Institute of Engineering, Tribhuvan University

**Funding Agent**: University Grant Commission, Nepalese Ministry of Education, Science and Technology, Kathmandu Nepal

**Submitted**: April, 2020

**Period**: July, 2020-Jun, 2022

**Project No.:** - TSI lab-77/78-01

1. **Principal Investigator (PI)**

**Project title:** “Physicochemical properties of hydrothermally grown ceramic nanoparticles on the surface of activated carbon prepared from waste materials”.

**Funding Agent**: The World Academy of Science, Trieste, Italy

**Submitted**: March, 2018

**Period**: September 24, 2018- September 20, 2020

**Project No.:** 18-168RG/CHE/AS\_G-FR3240303651

1. **Principal Investigator (PI)**

**Project title:** “Study on the physicochemical properties of the electrospun graphene oxide/PU composite nanofibers for water filters and biomedical membranes”.

**Funding Agent**: National Research Foundation, Korean Ministry of Education, Science and Technology (MIST), Republic of Korea

**Submitted**: January, 2012

**Period**: May 1, 2012- April 30, 2014

**Project No.:** 2012013423

1. **Co-Investigator (Co-I)**

**Project title:** “Design and modification of nanoporous carbon from locally available agricultural waste for wireless communication and removal of arsenic from water

**Funding Agent**: University Grant Commission, Nepalese Ministry of Education, Science and Technology, Kathmandu Nepal

**Submitted**: February, 2017

**Period**: March1, 2018-February 30, 2021

**Project No.:** -CRG-74/74-Engg-02

1. **Co-Investigator (Co-I)**

**Project title:** “Investigation of novel biomembrane fabrication techniques for control drug release on the surface of stent and durability test method to develop the third generation vascular stent”.

**Funding Agent**: National Research Foundation, Korean Ministry of Education, Science and Technology (MIST), Republic of Korea

**Submitted**: February, 2013

**Period**: May 1, 2013- April 30, 2016

**Project No.:** -2013R1A2A2A04015484

*Joint project with Prof. Cheol Sang Kim*

**Thesis Supervisor**

* *Supervising 4 PhD students at Applied Sciences and Chemical Engineering Department, Pulchowk Campus, IOE.*
* Supervised 31 Master students of material science and engineering at IOE, Pulchowk campus.
* External Examiner of many final thesis defense of PhD and master students from Nepal and India.

**LIST OF PUBLICATIONS**

1. **Hem Raj Pant**, Han Joo Kim, Chan Hee Park, Joong Hee Lee, Hak Yong Kim, Cheol Sang Kim, *True-nano in nano; biomimetic nanofibrous membrane in spider-web-like fashion via electrospinning,* ***Progress in Polymer Science,*** (submitted).
2. Dinesh Shah, Lok Ranjan Bhatta, Ram Kumar Sharma, Bishweshwar Pant, Mira Park, Gunendra Prasad Ojha**, Hem Raj Pant,** Nonwoven Electrospun Membranes as Tissue Scaffolds: Practices, Problems, and Future Directions, **Journal of Composite Science**, 2023;7(12),481.
3. K. Donato, A. Macchia, G. Bonetti, K. Dhuli, P. Chiurazzi, S. Cristoni, T. Beccari, B. Paneru, K.N. Poudyal, **H.R. Pant**, S.T. Connelly, M. Bertelli, *Reduction of nitrosamines in cigarette smoke vapors through a filter functionalized with polyphenols from olive tree*, **Clin Ter**, 2023;174, 2(6),126.
4. Ampika Bansiddhi, Gasidit Panomsuwan, Chadapat Hussakan, Thura Lin Htet, Bhuvaneswari Kandasamy, Kasidit Janbooranapinij, Nicha Choophun, Ratchatee Techapiesancharoenkij, **Hem Raj Pant,** Wei Lun Ang, Oratai Jongprateep. *Ecofriendly 3D Printed TiO2/SiO2/Polymer Scafolds for Dye Removal*, **Topics in Catalysis**, 2023 (Just accepted).
5. Manoj Kumar Jha, Dinesh Shah, Purnima Mulmi, Sahira Joshi, Ram Kumar Sharma, Bishweshwar Pant, Mira Park**, Hem Raj Pant,** Development of Activated Carbon from Bhang (Cannabis) Stems for Supercapacitor Electrodes, **Materials Letters**, 2023;344(134436).
6. Kshitij Thapa, Krishna Raj Regmi, Dinesh Shah, Ram Kumar Sharma, Gasidit Panomsuwan, Ratchatee Techapiesancharoenkij**, Hem Raj Pant,** Residual solvent-assisted facile deposition of honeycomb-like silver nanoflakes on the surface of electrospun PAN nanofibers, **Chemical Physics Letters**, 2022;801(139724).
7. Bishweshwar Pant, Gunendra Prasad Ojha, Jiwan Acharya, **Hem Raj Pant**, Mira Park **Hem Raj Pant,** Lokta paper-derived free-standing carbon as a binder-free electrode material for high-performance supercapacitors, **Sustainable Materials and Technology**, 2022;33(e00450).
8. Manoj Kumar Jha, Sahira Joshi, Ram Kumar Sharma, Allison A Kim, Bishweshwar Pant, Mira Park, **Hem Raj Pant**, *Surface Modified Activated Carbons: Sustainable Bio-Based Materials for Environmental Remediation,* **Nanomaterials**,2021;11(110:3140.
9. Abdalla Abdal-hay, Faheem A Sheikh, N Gómez-Cerezo, Abdulrahman Alneairi, Monis Luqman, **Hem Raj Pant**, Saso Ivanovski, *A review of protein adsorption and bioactivity characteristics of poly ε-caprolactone scaffolds in regenerative medicine*, **European Polymer Journal**, 2022;162:110892.
10. Priyanka Shrestha, Manoj Kumar Jha, Jeevan Ghimire, Agni Raj Koirala, Rajeshwar Man Shrestha, Ram Kumar Sharma, Bishweshwar Pant, Mira Park, **Hem Raj Pant**, *Decoration of Zinc Oxide Nanorods into the Surface of Activated Carbon Obtained from Agricultural Waste for Effective Removal of Methylene Blue Dye* **Materials** *2020;13(24);5667.*
11. Bishweshwar Pant, **Hem Raj Pant**, Mira Park, *Fe1− xS Modified TiO2 NPs Embedded Carbon Nanofiber Composite via Electrospinning: A Potential Electrode Material for Supercapacitors,* **Molecules** *2020;25 (5);1075.*
12. Surakshya Phaiju, Purnima Mulmi, Dikpal Kumar Shahi, Tae In Hwang, Arjun Prasad Tiwari, Rajendra Joshi, **Hem Raj Pant**, Mahesh Kumar Joshi, *Antibacterial Cinnamon Essential Oil Incorporated Poly (Ɛ− Caprolactone) Nanofibrous Mats: New Platform for Biomedical Application,* **Journal of Institute of Science and Technology** *2020;25(2):9-16.*
13. **Hem Raj Pant**, Mahesh Kumar Joshi, Agni Koirala, *Conversion of 2-dimensional Electrospun Membrane into 3-dimensional nanofibrous scaffold with desired shape,* ***Material Science and Engineering Journal,*** *2018;2(1):1.*
14. Lok Ranjan Bhatta, Agni Koirala, **Hem Raj Pant**, *Preparation and surface morphology of herbal based polylactide microspheres,* ***Materials Letter,*** *2019;235:157-160.*
15. Surya Prasad Adhikari, **Hem Raj Pant**, Hamouda M. Mousa, Joshua Lee, Han Joo Kim, Chan Hee Park, Cheol Sang Kim, *Synthesis of high porous electrospun hollow TiO2 nanofibers for bone tissue engineering application,* ***Journal of Industrial Engineering Chemistry,*** *2016;35:75-82.*
16. Mahesh Kumar Joshi,Arjun Prasad Tiwari, **Hem Raj Pant**, Bishnu Kumar Shrestha, Han Joo Kim, Chan Hee Park, Cheol Sang Kim, *In Situ Generation of Cellulose Nanocrystals in Polycaprolactone Nanofibers: Effects on Crystallinity, Mechanical Strength, Biocompatibility, and Biomimetic Mineralization,* ***Applied Materials and Interfaces,*** *2015;7 (35):19672-19683 .*
17. Mahesh Kumar Joshi, **Hem Raj Pant**, Arjun Prasad Tiwari, Bikendra Maharjan, Nina Liao, Han Joo Kim, Chan Hee Park, Cheol Sang Kim, *Three-dimensional cellulose sponge: Fabrication, characterization, biomimetic mineralization, and in vitro cell infiltration,* ***Carbohydrate Polymer,*** *2016;136 :154-162 .*
18. Hamouda M. Mousa, Kamal H. Hussein, **Hem Raj Pant**, Heung M. Woo, Chan Hee Park, Cheol Sang Kim, *In vitro degradation behavior and cytocompatibility of a bioceramic anodization films on the biodegradable magnesium alloy,* ***Colloids and Surfaces A : Physicochemical and Engineering Aspects,*** *2016;488:82-92.*
19. Mahesh Kumar Joshi, **Hem Raj Pant**, Arjun Prasad Tiwari, Han Joo Kim, Chan Hee Park, Cheol Sang Kim, *Multi-layered macroporous three-dimensional nanofibrous scaffold via a novel gas foaming technique,* ***Chemical Engineering Journal,*** *2015;275 :79-88 .*
20. Mahesh Kumar Joshi, **Hem Raj Pant**, Jun Hee Kim, Han Joo Kim, Cheol Sang Kim, *One-pot synthesis of Ag-iron oxide/reduced graphene oxide nanocomposite via hydrothermal treatment,* ***Colloids and Surfaces A : Physicochemical and Engineering Aspects,*** *2014;446:102-108.*
21. Surya Prasad Adhikari, **Hem Raj Pant**, Han Joo Kim, Chan Hee Park, Cheol Sang Kim, *Deposition of ZnO flowers on the surface of g-C3N4 sheets via hydrothermal process,* ***Ceramics International,*** *2016 ;41:12923-12929.*
22. Surya Prasad Adhikari, **Hem Raj Pant**, Han Joo Kim, Chan Hee Park, Cheol Sang Kim, *One pot synthesis and characterization of Ag-ZnO/g-C3N4 photocatalyst with improved photoactivity and antibacterial properties,* ***Colloids and Surfaces A : Physicochemical and Engineering Aspects,*** *2015 ;482:477-484.*
23. Mahesh Kumar Joshi, **Hem Raj Pant,** Han Joo Kim, Jun Hee Kim, Cheol Sang Kim, *One-pot synthesis of Ag-iron oxide/reduced graphene oxide nanocomposite via hydrothermal,* ***Colloids and Surfaces A:Physicochemical and Engineering Aspects,*** *2014;446:102-108 .*
24. **Hem Raj Pant**, Surya Prasad Adhikari, Bishweshwar Pant, Mahesh Kumar Joshi , Han Joo Kim, Chan Hee Park, Cheol Sang Kim, *Immobilization of TiO2 nanofibers on reduced graphene sheets: Novel strategy in electrospinning,* ***Journal of Colloid and Interface Science,*** *2015;457:174-179.*
25. **Hem Raj Pant**, Pasupati Pokharel, Mahesh Kumar Joshi, Surye Adhikari, Han Joo Kim, Chan Hee Park, Cheol Sang Kim, *Processing and characterization of electrospun graphene oxide/polyurethane composite nanofibers for stent coating,* ***Chemical Engineering Journal,*** *2015;270:336-342.*
26. **Hem Raj Pant**, Han Joo Kim, Mahesh Kumar Joshi, Bishweshwar Pant, Chan Hee Park, Jeong In Kim, K. S. Hui, Cheol Sang Kim, *One-step fabrication of multifunctional composite polyurethane spider-web-like nanofibrous membrane for water purification,* ***Journal of Hazardous Materials,*** *2014;264:25-33.*
27. **Hem Raj Pant**, Han Joo Kim, Lok Ranjan Bhatt, Mahesh Kumar Joshi, Eun Kyo Kim, Jeong In Kim, Abdalla Abdal-hay, K. S. Hui, Cheol Sang Kim, *Chitin butyrate coated electrospun nylon-6 fibers for biomedical applications,* ***Applied Surface Science,*** *2013;285:538-544.*
28. **Hem Raj Pant**, Prabodh Risal, Chan Hee Park, Leonard D. Tijing, Yeon Jun Jeong, Cheol Sang Kim, *Core-shell structured electrospun biomimetic composite nanofibers of calcium lactate/nylon-6 for tissue engineering,* ***Chemical Engineering Journal,*** *2013;221:90-98.*
29. **Hem Raj Pant**, Chan Hee Park, Pasupati okharel, Leonard D. Tijing, Dai Soo Lee, Cheol Sang Kim, *ZnO micro-flowers assembled on reduced graphene sheets with high photocatalytic activity for removal of pollutants,* ***Powder Technology,*** *2012;235:853-858.*
30. **Hem Raj Pant**, Bishweshwar Pant, Han Joo Kim, Altangerel Amarjargal, Chan Hee Park, Leonard D. Tijing, Eun Kyo Kim, Cheol Sang Kim, *A green and facile one-pot synthesis of Ag-ZnO/RGO nanocomposite with effective photocatalytic activity for removal of organic pollutants,* ***Ceramics International,*** *2013;39(5): 5083-5091.*
31. **Hem Raj Pant**, Bishweshwar Pant, Pasupati Pokharel, Han Joo Kim, Leonard D. Tijing, Chan Hee Park, Dai Soo Lee, Hak Yong Kim, Cheol Sang Kim, *Photocatalytic TiO2-RGO/nylon-6 spider-wave-like nano-nets via electrospinning and hydrothermal treatment,* ***Journal of Membrane Science,*** *2012;429:225-234.*
32. **Hem Raj Pant**, Bishweshwar Pant, Chan Hee Park, Han Joo Kim, Dong Su Lee, Leonard D. Tijing, Bo Sang Hwang, Hak Yong Kim, Cheol Sang Kim, *RGO/nylon-6 composite mat with unique structural features and electrical properties obtained from electrospinning and hydrothermal process,* ***Fibers and Polymers,*** *2014;14(6):970-975.*
33. **Hem Raj Pant**, Cheol Sang Kim, *Biomimetic synthesis of hollow calcium phosphate nanospheres on core-shell structured electrospun calcium lactate/nylon-6 nanofibers,* ***Materials Letters*** *2013;92:90-93.*
34. **Hem Raj Pant**, Prabodh Risal, Chan Hee Park, Leonard D. Tijing, Yeon Jun Jeong, Cheol Sang Kim, *Synthesis, characterization, and mineralization of polyamide-6/calcium lactate composite nanofibers for bone tissue engineering,* ***Colloids Surfaces B: Biointerfaces****,* 2013;102:152-157.
35. **Hem Raj Pant**, Cheol Sang Kim, *Electrospun gelatin/nylon-6 composite nanofibers for biomedical applications,* ***Polymer International*** *2013;62:1008-1013.*
36. **Hem Raj Pant,** Bishweshwar Pant, Ram Kumar Sharma, Altangerel Amarjargal, Han Joo Kim, Chan Hee Park, Leonard D. Tijing, Cheol Sang Kim, *Antibacterial and photocatalytic properties of Ag/TiO2/ZnO nano-flowers prepared by facile one-pot hydrothermal process,* ***Ceramic International****,*2013;39:1503-1510.
37. **Hem Raj Pant**, Chan Hee Park, Leonard D. Tijing, Altangerel Amarjargal, Do-Hee Lee, Cheol Sang Kim, *Bimodal fiber diameter distributed graphene oxide/nylon-6 composite nanofibrous mats via electrospinning,* ***Colloids and Surfaces A: Physicochemical and Engineering Aspect,*** 2012;407:121-125.
38. **Hem Raj Pant,** Chan Hee Park, Bishweshwar Pant, Leonard D. Tijing, Hak Yong Kim, Cheol Sang Kim, *Synthesis, characterization, and photocatalytic properties of ZnO nano-flower containing TiO2 NPs,* ***Ceramic International****,* 2012;96: 1984-1988.
39. **Hem Raj Pant**, Woo-il Baek, Ki Taek Nam, In-Soo Jeong, Nasser A. M. Barakat, Hak Yong Kim, *Effect of lactic acid on the polymer crystallization chain conformation and fiber morphology in electrospun nylon-6 mat*, ***Polymer,*** 2011;52:4851-4856.
40. **Hem Raj Pant**, Ki-Taek Nam, Oh Han-Ju, Bishweshwar Pant, Gopal Panthi, Hak-Yong Kim, *Effect of molecular weight on the fiber morphology of electrospun mat,* ***Journal of Colloid and Interface Science****, 2011; 364: 107-111.*
41. **Hem Raj Pant**, Madhab P. Bajgai, Ki Taek Nam, Yun A. Seo, Dipendra Raj Pandeya, Seong Tshool Hong, Hak Yong Kim,*Electrospun nylon-6 spider-net like nanofibers mat containing TiO2 nanoparticles: A multifunctional nanocomposite textile material.*[**Journal of Hazardous Materials.**](http://www.elsevier.com/locate/jhazmat) 2011; 185: 124-130.
42. **Hem Raj Pant**, Woo-il Baek, Ki Taek Nam, Yun A. Seo, Hyun-Ju Oh, Hak Yong Kim, *Fabrication of polymeric microfibers containing rice-like oligomeric hydrogel nanoparticles on their surfaces: A novel strategy in electrospinning process*, ***Materials Letters*,** 2011; 65: 1441–1444.
43. **Hem Raj Pant**, Dipendra Raj Pandeya, Ki Taek Nam, Woo-il Baek, Seong Tshool Hong, Hak Yong Kim, *Photocatalytic and antibacterial properties of a TiO2/nylon-6 electrospun nanocomposite mat containing silver nanoparticles*.[**Journal of Hazardous Materials.**](http://www.elsevier.com/locate/jhazmat) 2011; 189:465-471.
44. **Hem Raj Pant**, Madhab Neupane, Bishweshwar Pant, Gopal Panthi, Han-ju Oh, Min Ho Lee, Hak Yong Kim, *Fabrication of highly porous poly(ε-caprolactone) fibers for novel tissue scaffold via water-bath electrospinning,* ***Colloids Surfaces B: Biointerfaces****,* 2011; 88: 587-592.
45. **Hem Raj Pant**, Madhab Prasad Bajgai, Ki Taek Nam, Kong H. Chu, Soo-Jin Park, Hak Yong Kim,*Formation of electrospun nylon-6/methoxy poly(ethylene glycol) oligomer spider-wave nanofibers*, ***Materials Letters*** 2010;64: 2087–2090.
46. **Hem Raj Pant**, Madhab Prasad Bajgai, Chuan Yi, R. Nirmala, Ki Taek Nam, Woo-il Baek, Hak Yong Kim,*Effect of successive electrospinning and the strengthof hydrogen bond on the morphology of electrospun nylon-6 nanofibers* ***Colloids and Surfaces A: Physicochemical and Engineering Aspect*** 2010; 370: 87-94.
47. Chan Hee Park, **Hem Raj Pant**, Cheol Sang Kim,*Novel robot-assisted angled multi nozzle electrospinning set up: computer simulation with experimental observation on electric field and fiber morphology,* ***Textile Research Journal,*** 2014;84 (10):1044-1058.
48. Han Joo Kim, **Hem Raj Pant**, Nag Jong Choi, Cheol Sang Kim,*Composite electrospun fly ash/polyurethane fibers for absorption of volatile organic compounds from air,* ***Chemical Engineering Journal*** 2013; 230: 244-250.
49. Han Joo Kim, **Hem Raj Pant**, Altangerel Amarjargal, Cheol Sang Kim,*Incorporation of silver-loaded ZnO rods into electrospun nylon-6 spider-web-like nanofibrous mat using hydrothermal process,* ***Colloids and Surfaces A: Physicochemical and Engineering Aspect,***2013;434:49-55.
50. Han Joo Kim, **Hem Raj Pant**, Chan Hee Park, Leonard D. Tijing, Nag Jung Choi, Cheol Sang Kim,*Hydrothermal growth of mop-brush-shaped ZnO rods on the surface of electrospun nylon-6 nanofibers C****eramics International,*** 2013; 39:3095-3102.
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**Book Publication**

1. **Hem Raj Pant, *Nano Science and Engineering*,** ISBN 978-9937-611-35-0,Scholars’ Publication and Printing Pvt. Ltd.
2. **Hem Raj Pant, *Chemical Calculation for BSc I year*,** ISBN 978-9937-611-37-4,Scholars’ Publication and Printing Pvt. Ltd.
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4. Daman Raj Gautam, Bishan Datt Bhatt, **Hem Raj Pant,** Uday Kumar Jha, Tank Mukhiya**,** and Deval Prasad Bhattarai, **Modern Approach to Chemistry** for grade XII, ISBN 978-9937-615-57-0, Nepal.
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6. **Hem Raj Pant,** Bisan Datt Bhatt, Tank Mukhiya**,** and Deval Prasad Bhattarai, **Chemistry** **for Health Sciences**, CTEVT, ISBN 978-9937-615-07-2, Nepal.
7. Daman Raj Gautam, **Hem Raj Pant,** Bisan Datt Bhatt, Tank Mukhiya**,** and Deval Prasad Bhattarai, **Modern Agricultural** **Chemistry for Plant and Animal Sciences I**, CTEVT, Nepal.
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11. **Hem Raj Pant** and Rajeshowrman Shrestha, **Creative Chemistry** for B.E. entrance preparation of Tribhuvan University, Nepal.
12. **Hem Raj Pant** and Cheol Sang Kim, **Electrospinning: a versatile technique for fabrication and surface modification of nanofibers for biomedical applications (**Book Chapter (chapter 9) of Frontiers in Biomaterials, Vol. 1, 2014, 241-273**) (ISSN:2352-3921, ISBN:978-1-60805-877-8, eISBN:978-1-60805-876-1)**.
13. Mahesh Kumar Joshi, Rajeshowrman Shrestha, **Hem Raj Pant***, 3D Nonwoven Fabrics for Biomedical Applications,* *Generation, Development and Modifications of Natural Fibers,*INTECHOPEN LIMITED, London SE1 9SG , United Kingdom 2020(in press).
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**CONFERENCE PROCEDING**

1. 2023 (Dec, 14-16) **Hem Raj Pant**, Electrospun composite membrane in water purification, **TECHNOSCAPE23,** Vellore Institute of Technology, Tamil Nadu, India (**Keynote Speaker)**
2. 2023 (Dec, 7-9) **Hem Raj Pant**, Electrospun Membrane as Tissue Scaffolds: Practices, Problems, and Future Directions, **International Conference of Hybrid Materials (ICAHM2023),** Jeonbuk National University, Jeonju, South Korea (**Invited Speaker)**
3. 2023 (May, 25-27) **Hem Raj Pant**, Himalayan Essential Oils; Green Solvent in

Polymer Processing, **INTERNATIONAL CHEMICAL CONGRESS (ACS, 2023),** Nepal (**Keynote Speaker)**

1. 2023 (April, 11) **Hem Raj Pant**, HERBAKL ESSENTIAL OILS: A NOVEL GREEN SOLVENT IN POLYMER NANO-PROCESSING, **ADVANCES IN SUSTAINABLE POLYMER (ASP, 2023),** Nepal (**Invited Speaker**).
2. 2021 (July, 13) **Hem Raj Pant**, NANOFIBROUS 3D ELECTROSPUN MEMBRANE FOR REGENERATIVE MEDICINE **INTERNATIONAL SYMPOSIUM ON ADVANCED MATERIALS & PROCESSING (ISAMP, 2021),** Malaysia (**Keynote Speaker**).
3. 2021 (July, 7-9) **Hem Raj Pant**, Fabrication of reduced graphene sheets decorated with TiO2 nanofibers, **Materials Thailand: AMF-AMEC2021,** Thailand (**Keynote Speaker**).
4. **2020** (January, 30-31), **Hem Raj Pant**, *Designing 3-D Electrospun Nanofibrous Scaffold from Gas-foaming Technique*, **International Conference on Recent Innovation in Engineering and Technology-20 (ICRIET, 2020),** Pune, India (**Keynote Speaker**).
5. **2019** (September, 24-27), **Hem Raj Pant**, *Fabrication of 3D spongy electrospun nanofibrous membrane for tissue scaffold*, **The 8th Asian Conference on Colloid and Interface Science (ACCIS 2019),** Kathmandu, Nepal (**Invited Speaker**).
6. **2018** (March, 08-10), **Hem Raj Pant**, *True-nano in Nano; Biomimetic Bimodal Electrospun Nanofibrous Membrane in Spider Web-like Fashion*, **International Chemical Congress (ICC-2018),** Sauraha, Chitawan Nepal (**Keynote Lecture**).
7. **2017** (October, 10-13), **Hem Raj Pant**, *Processing of 3-D nanofibrous scaffold for tissue engineering application*, **International Conference on Functional Nanomaterials and Nanotechnology (ICFNN-2017),** Kathmandu Nepal (**Invited Speaker).**
8. **2017** (May, 4-5), **Hem Raj Pant**, *Electrospun Nanofibers for Tissue Engineering*, **3rd National Symposium on Nanotechnology for Novel Materials Processing (SNMP-2017**), Kathmandu Nepal (**Invited Speaker**).
9. ***2014*** (November, 7-9), **Hem Raj Pant**, Surye Adhikari, Chan Hee Park, Mahesh Kumar Joshi, Cheol Sang Kim, *Calcium lactate coated electrospun nylon-6 fibers and its biomedical application*, **International Conference on Engineering and Applied Science (ICEAS2014), *Kathmandu, Nepal*** (**oral**).
10. ***2013*** (November, 7-9), **Hem Raj Pant**, Chan Hee Park, Mahesh Kumar Joshi, Cheol Sang Kim, *Calcium lactate coated electrospun nylon-6 fibers and its biomedical application*, **International Conference on Engineering and Applied Science (ICEAS2013), *Osaka, Japan*** (**oral**).
11. ***2013*** (September, 25-28), **Hem Raj Pant**, Mahesh Kumar Joshi, Cheol Sang Kim, *Deposition of chitin butyrate layer on the surface of nylon-6 nanofibers by electrospinning*, **The 4th International Conference on Biobased Polymers,** Hanyang University, Seoul, South Korea (**oral**).
12. ***2013*** (March, 3-7), **Hem Raj Pant**, Chan Hee Park, Han Joo Kim, Cheol Sang Kim, *Reduced grapheme sheets decorated with ZnO flowers by hydrothermal process*, **TMS2013, Henry B. Gonzalez Convention Center, *San Antonio, Texas, USA*** (**oral**).
13. ***2013*** (March, 11-15, 2013), **Hem Raj Pant**, Eun Kyo Kim, Han Joo Kim, Cheol Sang Kim, *Effect of functionalities on biomimetic mineralization of polymer nanofibers*, **POLYCHAR21, Kim Dae Jung Convention Center, Gwangju, South Korea** (**oral**).
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17. **2011** (October, 21-23), **Hem Raj Pant,** Hak Yong Kim,Cheol Sang Kim, *Formation of electrospun spider-net like nanofibrous mat for air filtration,* ***International Conference on Advanced Materials and Nanotechnology,* Kathmandu, Nepal** **(oral**).
18. **2011** (August, 24-26), **Hem Raj Pant,** Hak Yong Kim,*Mass-produced technology for nanofiber mats,* ***Nano-Korea***, **Kintex, Soel, Republic of Korea** (**Oral**).
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22. **2010** (November 25): **Hem Raj Pant,** Hak Yong Kim, *Study on degradation and morphology change of polymer nanofibers during successive electrospinning.* **Young Scientist Symposium**: organized by **Center for Healthcare Technology Development, Chonbuk National University, Jeonju,** **Republic of Korea** (**Oral)**.
23. **2019** (September, 24-27), Kiran Bagale, Ram Kumar Sharma, **Hem Raj Pant**, *Preparation and Characterization of conductive thin film of activated carbon based PAN/PANI composite*, **The 8th Asian Conference on Colloid and Interface Science (ACCIS 2019),** Kathmandu, Nepal.
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32. **2011** (May 19-20): **Hem Raj Pant,** Ki-Taek Nam, Hyun-Ju Oh, Gopal Panthi, Bishweshwar Pant, Hak Yong Kim, *Fabrication of PCL microfibers containing MPEG NPs via electrospinning,**The 22nd International Conference on Molecular Electronics and Devices,* **POSCO International Center,Republic of Korea.**
33. **2011** (August 29 - Sept. 4): **Hem Raj Pant**, Bishweshwar Pant, Ki Taek Nam, Hyun Ju Oh, Hak Yong Kim, *Formation of sub-nano fibrous electrospun mat for effective filtration via successive electrospinning,* **The 4th International Symposium on High-Tech Fiber Engineering**, Shinshu University, **Japan.**
34. **2013** (July, 10-12): Eun Kyo Kim, **Hem Raj Pant**, Seung-ji Kang, Bo Sang Hwang, Chan-Hee Park, Mahesh Kumar Joshi, Cheol Sang Kim, *Ag-ZnO/RGO nanocomposite for removing of dyes from water,* ***Nano-Korea***, **Koex, Soel, Republic of Korea**.
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**DECLARATION**

I am confident of my ability to work in a team and I hereby declare that the information furnished above is true to the best of my knowledge and belief.

Updated: 1st August, 2022 Dr. Hem Raj Pant