

BIO-DATA

Dr. INDRAPAL KARBHAL

M.Sc, M.Phil, Ph. D.(Chemistry), CSIR-UGC- JRF, NET, GATE

Assistant Professor

School of Studies in Chemistry

Pt. Ravishankar Shukla University

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Educational Qualifications:

Examination/ Degree	Board/University	Subject	Year
Ph. D	National Chemical Laboratory- Pune (AcSIR)	Physical and Material Chemistry (Energy Storage)	2020
M. Phil.	Pt. Ravishankar Shukla University, Raipur	Chemistry (Phy.Org. Chem.)	2011
M. Sc.	Pt. Ravishankar Shukla University, Raipur	Chemistry	2010

Others Qualification:

Examination/ Degree	Board/University	Subject	Year
CSIR-UGC JRF	CSIR-New Delhi	Chemical Science	June 2012
CSIR- NET	CSIR-New Delhi	Chemical Science	Dec. 2011

GATE	IIT Delhi	Chemistry	2012
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Experience:

Teaching experience

As Assistant professor, teaching post graduate students, school of studies in chemistry,
Pt. Ravishankar Shukla University Raipur (C. G.), February, 2017 to till date.

CSIR-UGC NET Teaching Experience:

CSIR-NET Coaching experience at UGC Coaching Centre, Pt. Ravishankar Shukla University Raipur (C.G.) during May and June 2012 in the subject of **Chemical Science**.

Research Experience:

1. *During Ph. D. (Physical and Material Chemistry) work on energy storage devices with thesis title “Boron Carbon Nitride (BCN): Synthesis and Application for Electrochemical Energy Storage Devices”.*
2. One year, During M. Phil. (Chemistry), worked on Physical Organic Chemistry (Kinetics) and submitted dissertation to Pt. Ravishankar Shukla University, Raipur (C.G.) entitled *“Esterolytic Cleavage of Carboxylate and Phosphate Esters by Hydroxamate Ions in Micellar Media”.*
 - Well versed in the synthesis of hetero atom (B and N) doped carbon, 0D quantum dots, 1D nanotubes, 2D nanosheets and 3D porous carbon (honey comb morphology) for energy storage devices.
 - Experience on the handling of the all the electrochemical technique like cyclic voltammogramic techniques, Impedance techniques, battery analyzer etc.
 - Experience in the doing of the electrochemical applications of the materials and testing of the materials for the batteries, supercapacitor application.
 - Familiar to operate instruments like XRD, Raman, UV-vis., FTIR and have theoretical knowledge of SEM, HR-TEM, XPS, AFM techniques.
 - Assisted M. Tech. Trainee students for their project work

Research Interest:

Synthesis and Design of heteroatom (B, N, S and P) doped carbon with 0D quantum dots, 1D nanotubes, 2D nanosheets and 3D porous carbon (honey comb morphology) and their application in Energy Storage application such as Supercapacitor, Li/Na ion battery. Synthesis and design of metal and metal oxide nanoparticles as well as their use in biological and photocatalysis.

Research Area:

Electrochemistry, Energy storage device (Supercapacitor, Li/Na ion battery), Nanotechnology, Sensor, Material Chemistry: Design and Synthesis nanomaterials, Catalyst etc.

Research Publication:

S. No.	Title	Authers Name	Journal Name	Impact Factor
1.	Laser patterning of boron carbon nitride electrodes for flexible micro-supercapacitor with remarkable electrochemical stability/capacity."	Indrapal Karbhal , Aniruddha Basu, Apurva Patrike, and Manjusha V. Shelke.	<i>Carbon</i> , 2020 , 171: 750-757.	8.821
2.	Facile Green Synthesis of BCN Nanosheets as High-Performance Electrode Material for Electrochemical Energy Storage"	Indrapal Karbhal , Rami Reddy Devarapalli, Joyashish Debgupta, Vijayamohanan K. Pillai, Pulickel M. Ajayan, and Manjusha V. Shelke.	<i>Chemistry–A European Journal</i> , 2016 , 22,7134-7140	5.31
3.	Facile Synthesis of Unique Cellulose Triacetate Based Flexible and High	Trupti C. Nirmale, Indrapal Karbhal , Ramchandra S. Kalubarme, Manjusha V. Shelke,	<i>ACS applied materials & interfaces</i> , 2017 , 9,	8.758

	Performance Gel Polymer Electrolyte for Lithium Ion Batteries	Anjani J. Varma, and Bharat B. Kale.	34773-34782.	
4.	Ammonia-modified graphene sheets decorated with magnetic Fe ₃ O ₄ nanoparticles for the photocatalytic and photo-Fenton degradation of phenolic compounds under sunlight irradiation	Purna K. Boruah, Bhagyasmeeta Sharma, Indrapal Karbhal , Manjusha V. Shelke, and Manash R. Das.	<i>Journal of Hazardous Materials</i> , 2017 , 325, 90-100.	9.038
5.	Electrochemical capacitive energy storage in PolyHIPE derived nitrogen enriched hierarchical porous carbon nanosheets	Ashvini B Deshmukh, Archana C. Nalawade, Indrapal Karbhal , Mohammed Shadbar Qureshi, and Manjusha V. Shelke.	<i>Carbon</i> , 2018 , 128, 287-295.	8.821
6.	Silver nanoparticles for selective detection of phosphorus pesticide containing π -conjugated pyrimidine nitrogen and sulfur moieties through non-covalent interactions	Kamlesh Shrivastava, Sushama Sahu, Bhuneshwari Sahu, Ramsingh Kurrey, Tarun Kumar Patle, Tushar Kant, Indrapal Karbhal , Manmohan L. Satnami, Manas Kanti Deb, and Kallol Kumar Ghosh. "	<i>Journal of Molecular Liquids</i> , 2019 , 275, 297-303.	5.065
7.	Spectroscopic studies on in vitro molecular interaction of highly fluorescent carbon dots with different serum albumins	Reshma Sahu, Vaishnav, Sandeep Kumar, Indrapal Karbhal , Manmohan L. Satnami, and Kallol K. Ghosh.	<i>Journal of Molecular Liquids</i> , 2018 , 255, 279-287.	5.065

8.	A carbon quantum dot–gold nanoparticle system as a probe for the inhibition and reactivation of acetylcholinesterase: detection of pesticides	Jyoti Korram,, Lakshita Dewangan, Rekha Nagwanshi, <u>Indrapal Karbhal</u> , Kallol K. Ghosh, and Manmohan L. Satnami.	<i>New Journal of Chemistry</i> , 2019 , 43, 6874-6882.	3.288
9.	Gold nanoprobe for inhibition and reactivation of acetylcholinesterase: An application to detection of organophosphorus pesticides	Manmohan L. Satnami,, Jyoti Korram, Rekha Nagwanshi, Sandeep K. Vaishanav, <u>Indrapal Karbhal</u> , Hitesh K. Dewangan, and Kallol K. Ghosh.	<i>Sensors and Actuators B: Chemical</i> , 2018 , 267, 155-164.	7.100
10	A low-cost screen printed glass electrode with silver nano-ink for electrochemical detection of H ₂ O ₂ .	Archana Ghosale,, Kamlesh Shrivastava, Manas Kanti Deb, Vellaichamy Ganesan, <u>Indrapal Karbhal</u> , P. K. Bajpai, and Ravi Shankar. "	<i>Analytical methods</i> , 2018 , 10, 3248-3255	2.07
11.	Impact of rare-earth metal oxide (Eu ₂ O ₃) on the electrochemical properties of a polypyrrole/CuO polymeric composite for supercapacitor applications."	Majumder, Mandira, Ram Bilash Choudhary, Anukul K. Thakur, <u>Indrapal Karbhal</u>	<i>RSC Advances</i> , 2017 , 7, 20037-20048.	3.07
12.	Facile synthesis and electrochemical evaluation of PANI/CNT/MoS ₂ ternary composite as an electrode	Anukul K. Thakur, , Ashvini B. Deshmukh, Ram Bilash Choudhary, <u>Indrapal Karbhal</u> , Mandira Majumder, and	<i>Materials Science and Engineering: B</i> , 2017 , 223 24-34.	4.706

	material for high performance supercapacitor	Manjusha V. Shelke.		
13.	Sunlight assisted degradation of dye molecules and reduction of toxic Cr (vi) in aqueous medium using magnetically recoverable Fe ₃ O ₄ /reduced graphene oxide nanocomposite	Purna K. Boruah, Priyakshree Borthakur, Gitashree Darabdhara, Chaitanya K. Kamaja, <i>Indrapal Karbhal</i> , Manjusha V. Shelke, Pallabi Phukan, Dulen Saikia, and Manash R. Das.	<i>RSC Advances</i> 2016 , <i>6</i> , 11049-11063.	3.07
14.	O-Nucleophilicity of Hydroxamate Ions for Cleavage of Carboxylate and Phosphate Esters in Cationic Micelles	Manmohan L. Satnami, <i>Indrapal Karbhal</i> , Hitesh K. Dewangan.	<i>International Journal of Chemical Kinetics</i> , 2014 , <i>46</i> , 419-432.	1.531
15.	Nucleophilic Attach of Salicylhydroxamate Ion at C=O and P=O Centers in Cationic Micellar Media	Manmohan Lal Satnami, , Sunita Dhritlahre, Rekha Nagwanshi, <i>Indrapal Karbhal</i> , Kallol K. Ghosh, and Faruk Nome	<i>Journal of Physical Chemistry B</i> , 2010 , <i>114</i> , 16759-16765.	2.857
16.	A colorimetric nanoprobe based on enzyme-immobilized silver nanoparticles for the efficient detection of cholesterol.	Dewangan, L., Korram, J., <i>Indrapal Karbhal</i> , Nagwanshi, R., Jena, V. K., & Satnami, M. L. (2019).	<i>RSC Advances</i> , <i>9</i> (72), 42085-42095.	3.07
17.	A low-cost paper-based flexible energy storage device using a conducting	Devi, R., Tapadia, K., Kant, T., Ghosale, A., Shrivastava, K., <i>Karbhal</i> , I., & Maharana, T.	<i>New Journal of Chemistry</i> , 2020). <i>44</i> (31), 13446-	3.288

	polymer nanocomposite.		13457.	
18.	"Uncovering the origin of enhanced field emission properties of rGO–MnO ₂ heterostructures: a synergistic experimental and computational investigation."	Rondiya, Sachin R., Indrapal Karbhal , Chandradip D. Jadhav, Mamta P. Nasane, Thomas E. Davies, Manjusha V. Shelke, Sandesh R. Jadhkar, Padmakar G. Chavan, and Nelson Y. Dzade.	<i>RSC Advances</i> 10, no. 43 (2020): 25988-25998.	3.07
19.	"A simple and convenient dry-state SEIRS method for glutathione detection based on citrate functionalized silver nanoparticles in human biological fluids."	Khalkho, Beeta Rani, Ramsingh Kurrey, Manas Kanti Deb, Indrapal Karbhal , Bhuneshwari Sahu, Shubhra Sinha, Yaman Kumar Sahu, and Vikas Kumar Jain.	<i>New Journal of Chemistry</i> (2020).	3.288
20.	"CdTe QD-based inhibition and reactivation assay of acetylcholinesterase for the detection of organophosphorus pesticides."	Korram, Jyoti, Lakshita Dewangan, Indrapal Karbhal , Rekha Nagwanshi, Sandeep K. Vaishnav, Kallol K. Ghosh, and Manmohan L. Satnami.	<i>RSC Advances</i> 10, no. 41 (2020): 24190-24202.	3.07
21.	"Thermodynamic investigation of the interaction between ionic liquid functionalized gold nanoparticles and human serum albumin for selective determination of glutamine	Sahu, Sushama, Srishti Sharma, Indrapal Karbhal , and Kallol K. Ghosh	" <i>RSC Advances</i> 10, no. 52 (2020): 31400-31410.	3.07

22.	"Smartphone coupled with paper-based chemical sensor for on-site determination of iron (III) in environmental and biological samples."	Shrivastava, Kamlesh, Tushar Kant, Indrapal Karbhal , Ramsingh Kurrey, Bhuneshwari Sahu, Deepak Sinha, Goutam Kumar Patra, Manas Kanti Deb, and Shamsh Pervez.	<i>Analytical and Bioanalytical Chemistry</i> 412, no. 7 (2020): 1573-1583.	3.637
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Three Book Chapter: (Li ion battery, Silicon and CNF based material)
Conference/Symposia: More than 30
Member of Board of Studies (Pt. Ravishankar Shukla University Raipur)