


FACULTY PROFILE

Title	<b>PROF.</b>	First Name	<b>RAJESH</b>	Last Name	<b>KUMAR</b>	
Designation	<b>Professor of Physics</b>					
School /Dept. Name	University School of Basic and Applied Sciences					
Address:	<b>Prof. (Dr.) Rajesh Kumar</b> Professor of Physics [Indo-U.S.: Raman Fellow-UGC, Govt. of India] University School of Basic and Applied Sciences Room No.: BFR-207, B-Block Guru Gobind Singh Indraprastha University (Govt. of NCT of Delhi) Sector 16-C, Dwarka, New Delhi-110078, India.					
Phone No.	Office	<b>+91-11-25302406</b>				
	Residence					
	Mobile	<b>+91-9718876101</b>				
Email	rajeshkumar@ipu.ac.in			kumarrpi@gmail.com		
Web Page (if any)	<a href="http://www.ipu.ac.in/usbas/Professors.php">http://www.ipu.ac.in/usbas/Professors.php</a>					
Subjects Taught	B.Tech (Physics) B.Tech (Materials Science) M. Tech (Engineering Physics) Ph.D. (Physics)					
Areas of Interest/Specialization	<ul style="list-style-type: none"> <li>• Condensed Matter Physics, Nanotechnology</li> <li>• Ion Beam Engineering of Nanostructure Materials</li> <li>• Synthesis of Nanomaterials/Nanocomposites/ Polymers/Nanocomposite Polymers, Template-Based Electro Deposition of Metal and Semiconductor Nanowires and Applications</li> <li>• Nuclear Spectroscopy (PALS &amp; DBS, HPGe, NaI etc.)</li> <li>• Thin Films (ALD, PLD, RF &amp; DC Sputtering, Chemical, E-beam)</li> <li>• Energy Storage Materials (Lithium-ion battery/Supercapacitor, Gas Sensors)</li> </ul>					
Experience (in years)	Total	23 Years				
	Industry	NIL				
	Teaching	17 Years				
	Research	23 Years				
Educational Qualifications	UG	B.Sc. (Physics, Chemistry, Mathematics) (First Division)				
	PG	M.Sc. (Physics) (First Division)				
	Doctorate	Ph.D. (Physics), Aligarh Muslim University, Aligarh				
	Any other	<b>Post-Doctoral Fellow, Rensselaer Polytechnic Institute, New York, USA.</b>				

<p><b>Research Publications in International Journals (Last 5 years) (2017-2022)</b></p>	<p>[1] Deepika Gupta, Vishnu Chauhan, N. Koratkar, <b>Rajesh Kumar</b>, Electronic structure engineering of 2-D MoS<sub>2</sub> sputtered thin films under ion beam irradiation: Induced by controlled defect generation, <i>Ceramics International</i> 48 (2022) 2999–3019 (Elsevier)</p> <p>[2] Vishnu Chauhan, Deepika Gupta, S. Upadhyay, Aman Mahajan, A. Gaur, S. Kumar, <b>Rajesh Kumar</b>, Influence of high dose gamma radiation on optical, physico-chemical and surface morphology properties of nanocrystalline ZrO<sub>2</sub> thin films, <i>Optical Materials</i>, 126 (2022) 112121 (Elsevier)</p> <p>[3] Deepika, D.Gupta, V. Chauhan, Aman Mahajan, Rashi Gupta, S. Asad Ali, <b>RajeshKumar</b>, Influence of gamma radiation on optical, structural and surface morphological properties of WO<sub>3</sub> thin films grown by RF sputtering, <i>Radiation Physics and Chemistry</i> 202 (2022) 110554 (Elsevier).</p> <p>[4] Deepika Gupta and <b>Rajesh Kumar</b>, Modifications of optical, structural, chemical and morphological properties of molybdenum disulfide (MoS<sub>2</sub>) sputtered thin films under high dose gamma radiation, <i>Radiation Physics and Chemistry</i>, 197 (2022) 110144 (Elsevier).</p> <p>[5] Sahil, <b>Rajesh Kumar</b>, Mukesh Kumar Yadav, Pratik Kumar,OSL and TA-OSL properties of Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:Al for radiation dosimetry, <i>Journal of Alloys and Compounds</i>, 908 (2022), 164628.(Elsevier)</p> <p>[6] Deepika Gupta,Vishnu Chauhan, <b>Rajesh Kumar</b>, Sputter deposition of 2D MoS<sub>2</sub> thin films -A critical review from a surface and structural perspective, <i>Inorganic Chemistry Communications</i>, 144 (2022) 109848 (Elsevier).</p> <p>[7] Deepika Gupta, <b>Rajesh Kumar</b>, Ion Implantation as an approach for tuning of electronic structure, optical, morphological and electrical transport properties of sputtered Molybdenum disulfide thin films, <i>Materials Science in Semiconductor Processing</i> 2022 (In Press) (Elsevier)</p> <p>[8] K. Kumari S. Kumar, F. Ahmed, N. Ahmad, N. M. Shaalan, <b>Rajesh Kumar</b>, A. Alshoaibi, N. Arshi, S. Dalela, F. Sayeed, Structural, Morphological, Optical and Magnetic Studies of Cu-Doped ZnO Nanostructures, <i>Materials</i> 15 (22) (2022) 8184 (MDPI), Switzerland.</p> <p>[9] Deepika Gupta, Vishnu Chauhan, S. Upadhyay, N. Koratkar, F. Singh, S. Kumar, Aman Mahajan, Ramesh Chandra, <b>Rajesh Kumar</b>, Defects engineering and enhancement in optical and structural properties of 2D-MoS<sub>2</sub> thin films by high energy ion beam irradiation, <i>Materials Chemistry and Physics</i> 276 (2022) 125422.Elsevier)</p> <p>[10] Rashi Gupta, Vikas Kumar, Jagjeevan Ram, Vishnu Chauhan, Deepika Gupta, S. Kumar, N. Koratkar, <b>Rajesh Kumar</b>, Influence of high energy (MeV) Au<sup>9+</sup> ion irradiation for modification of properties in scaffold-assisted electro synthesized PbSe nanowires, <i>Inorganic Chemistry Communications</i> 135 (2022) 109093 (Elsevier)</p> <p>[11] Kavita Kumari S. Kumar, F. Ahmed, N.M. Shaalan, <b>Rajesh Kumar</b>, A.</p>
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Alshoaibi N. Arshi, S. Dalela, F. Sayeed, S. Dwivedi, Structural, Magnetic, and Electrical Properties of  $\text{CoFe}_2\text{O}_4$  Nanostructures Synthesized Using Microwave Assisted Hydrothermal Method, 15 (2022) 7955, (MDPI), Switzerland.

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- [13] Electrochemical performance of transition metal based  $\text{CoB}_2\text{O}_4$  (B = Co and Fe) oxides as an electrode material for energy storage devices, M. Goyal, S. Verma, J. Malik, P. Giri, **Rajesh Kumar**, A. Gaur, New J. Chem., 46, (2022), 10671–10681, Royal Society of Chemistry (RSC).
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- [19] Deepika Gupta, V. Chauhan, N. Koratkar, F. Singh, and **Rajesh Kumar**, High energy (MeV) ion beam induced modifications in  $\text{Al}_2\text{O}_3$ -ZnO multilayers thin films grown by ALD and enhancement in photoluminescence, optical and structural properties, Vacuum, vol. 192, no. July, p. 110435, (2021), doi: 10.1016/j.vacuum.2021.110435. (Elsevier).
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optical and morphological properties of SnO<sub>2</sub>-TiO<sub>2</sub> nanocomposite thin films, Journal of Materials Science: Materials in Electronics, vol. 29, no. 15, pp. 13328–13336, 2018, doi: 10.1007/s10854-018-9457-6. (Springer).

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Papers Published in Conference Proceedings (last 5 years)	NIL			
Books Authored/Book Volume Chapters	Ten (10) Book Chapters in Elsevier, Taylor & Francis and Springer			
No. of Conferences	National	Attended		Organized
		80		02
	International	29		01
Research Guidance	Awarded	PG	M.Phil	Doctorate
		20	N.A.	08
	Undergoing	NIL	N.A.	06
Research Projects	Completed	17 (UGC, DAE-BRNS, IUAC, DST, FRGS etc.)		
	Undergoing	02 (IUAC, New Delhi & FRGS)		



<p><b>Awards &amp; Distinctions</b></p>	<ul style="list-style-type: none"> <li>➤ Stanford University, USA has adjudged Dr. Rajesh Kumar of Guru Gobind Singh Indraprastha University, New Delhi as among the <b>World's Top 2% Scientists</b>.</li> <li>➤ <b>Member- The National Academy of Science, India (NASI)</b>.</li> <li>➤ <b>Faculty Achievement Award</b> -with additional grant Rs. 100000/-). at Guru Gobind Singh Indraprastha University, New Delhi on 5<sup>th</sup> September, 2015 (Teacher's Day).</li> <li>➤ <b>First Prize &amp; Best Researcher Award</b> at Guru Gobind Singh Indraprastha University, New Delhi on 5<sup>th</sup> September, 2010 (Teacher's Day) from Hon'ble Vice Chancellor and Chief Guest Prof. Yashpal (Ex-UGC, Chairman).</li> <li>➤ <b>Best Researcher Award</b> at Guru Gobind Singh Indraprastha University, New Delhi on 5<sup>th</sup> September, 2013 (Teacher's Day) from Hon'ble Vice Chancellor and Chief Guests Prof. R. K Shevgaonkar (Director, IIT, New Delhi and Prof. Devi Singh, Director of IIM, Lucknow).</li> <li>➤ <b>Indo-US Postdoctoral Raman Fellowship</b> awarded by University Grants Commission (UGC), Govt. of India.</li> <li>➤ Project Fellow, Sanctioned by Inter University Consortium for Department of Atomic Energy Facilities (IUC-DAEF), Kolkata Centre, Kolkata from April 1, 2001 to March 31, 2004.</li> <li>➤ <b>Post-Doctoral Fellowship (PDF)</b> in South Korean research project, 2004 at Department of Physics, University of Rajasthan, Jaipur.</li> <li>➤ Research Associateship(<b>RA</b>) from Council of Scientific Industrial Research (C.S.I.R), Govt. of India from 2005 to 2006.</li> <li>➤ <b>DST-ICTP Fellowship</b> award for attending School on Ion Beam Analysis &amp; Accelerator Applications at The Abdus Salam International Centre for Theoretical Physics (ICTP), <b>Trieste, ITALY</b>, during March 13-29, 2006.</li> <li>➤ <b>Visiting Scientist (Indo-Russian)</b>, Conducted the Experiment at Joint Institute for Nuclear Research(J.I.N.R), <b>Dubna, RUSSIA</b> in 2011, by Department of Science &amp; Technology (DST), Govt. of India.</li> <li>➤ <b>Young Scientist Award</b> from Department of Science &amp; Technology, Govt. of India under <b>Fast Track Scheme</b> (2006-2009).</li> <li>➤ Subject expert nominated by Director, IUAC, New Delhi for IUAC sanctioned research project: JRF selection committee(2013-2018).</li> <li>➤ Financial assistance for attending International Conferences by DST, Govt. of India.</li> <li>➤ Financial assistance for attending International Conferences by CSIR, Govt. of India.</li> <li>➤ Financial assistance for attending International Conferences by INSA Govt. of India.</li> <li>➤ Visited, <b>University of Puerto Rico</b>, Rio Piedras campus, Department of Physics, San Juan, <b>USA</b>, 2018.</li> <li>➤ <b>Visited more than twelve countries for academic and research pursuits wherein USA, UK, Mexico, Russia, Poland, Germany, Italy, Spain, Japan, Finland, China and Australia are primarily worth-mentioning</b></li> </ul>
<p><b>Administrative Assignments Handled</b></p>	<ol style="list-style-type: none"> <li>(1) Assistant Proctor of GGSIP University, New Delhi (2013).</li> <li>(2) Program Coordinator/Deputy Program Coordinator P.G. Diploma in Radiological Physics from beginning (2012) to 2017.</li> <li>(3) P.G. Diploma in Radiological Physics Lab In charge from beginning (2012) to 2016.</li> <li>(4) M.Tech (Engineering Physics) Lab In charge one year.</li> <li>(5) B.Tech. (Physics) Lab In charge (~ 1 Years).</li> <li>(6) Member in Time Table Committee (2011 to 2012).</li> <li>(7) Conducted Ph.D Directed Course final Exam in USBAS as Deputy Centre Superintendent in 2011.</li> <li>(8) Minor Committee University Examination (Regular &amp; Reappear).</li> <li>(9) Conducted University CET Exams (B.Tech, M.B.B.S, MCA, MBA, BBA etc.) as University Representative (UR) at different centers in all over India (2008-2019).</li> <li>(10) University Final Semester Exams in different affiliated Colleges under GGSIPU as University Representative.</li> <li>(11) University Convocation-2012 as Member in Reception Committee.</li> <li>(12) Organized Expert Lectures for B.Tech, M.Tech (EP &amp; Nano) &amp; Ph.D. Students in USBAS, GGSIP University (2009 &amp; 2011).</li> <li>(13) Admission officer for various courses of GGS Indraprastha University, New Delhi.</li> <li>(14) Observer in admission of various courses in affiliated Colleges of G G S Indraprastha University, New Delhi.</li> </ol>

	<p>(15) Convener of Academic audit (2012-13) and academic inspection committee in affiliated college of GGSIP University, New Delhi.</p> <p>(16) Convener of affiliation committee of two Medical Institutes with G G S Indraprastha University, New Delhi-2013.</p> <p>(17) Member in School Research Committee (SRC) since 2014 to till date.</p> <p>(18) Member-Research Advisory Committee (RAC)</p> <p>(19) Member in Board of Study (BOS) for two years (2014-2016 &amp; 2021 to till date).</p> <p>(20) Subject expert (Physics) in Departmental Research Committee at Indira Gandhi Delhi Technical University for Women (IGDTUW), Delhi-2021 to till date.</p> <p>(21) Member in Board of Study (BOS) in Physics at Manav Rachna University, Faridabad DRC Member in Physics at Manav Rachna University, Faridabad</p> <p>(22) Member in University Research Compendium , DRC, GGSIP University, New Delhi</p> <p>(23) Member in Technical Committee East Campus (GGSIPU) for Physics Lab Equipment Purchase establishing of Physics Lab at East campus.</p> <p>(24) Member-PhD Admission Committee</p> <p>(25) Deputy Superintendent of University Spot Evaluation of End Term Exam-2014.</p> <p>(26) Deputy Center Superintendent of University Spot Evaluation of End Term Exam-2015</p> <p>(27) Additional Center Superintendent of University Spot Evaluation of End Term Exam-2016</p> <p>(28) Additional Center Superintendent of University Spot Evaluation of End Term Exam-2018</p> <p>(29) Convener of Academic audit (2018) and academic inspection committee in affiliated colleges of GGSIP University, New Delhi.</p> <p>(30) Convener of Academic audit/Joint Assessment Committee (JAC) (2019) and academic inspection committee in affiliated colleges of GGSIP University, New Delhi.</p> <p>(31) University Convocation-2019 in Stage Management Committee.</p> <p>(32) Additional Center Superintendent of University Spot Evaluation of End Term Exam-2019.</p> <p>(33) Additional Center Superintendent of University Spot Evaluation of End Term Exam-2020.</p> <p>(34) Convener of Academic Audit/Joint Assessment Committee (JAC) (2020, 2021, 2022) and academic inspection committee in affiliated colleges of GGSIP University, New Delhi.</p> <p>(35) Convener School Library Committee, GGSIP University-2020</p> <p>(36) Deputy Center Superintendent of Conduct University End Term Exam-2020 &amp; 2021</p> <p>(37) Member in CARE–Consortium for Academic and Research Ethics, Indraprastha Internal Quality Assurance Cell (IIQAC), Guru Gobind Singh Indraprastha University, New Delhi-2020.</p> <p>(38) Member in Committee of financial assistance scheme and Merit cum means for EWS for interview of students under the Directorate of Students' Welfare, GGSIPU, Delhi (2021 &amp; 2022)</p> <p>(39) B.Tech (Physics) Coordinator-2021 &amp; B.Tech. (Physics) lab In charge</p> <p>(40) Faculty Coordinator in Science Club, GGSIP University, New Delhi-2021.</p> <p>(41) Committee Member in New Pension Scheme (NPS) to implement in GGSIP University, New Delhi-2021.</p> <p>(42) Committee Member in General Insurance Scheme (GIS) to implement in GGSIP University, New Delhi-2021.</p> <p>(43) Assistant Program Coordinator-NSS, GGSIP University, New Delhi-2022 to till date.</p>
Association with Professional Bodies	<ol style="list-style-type: none"> <li>1. Vice President of Nuclear Track Society (NTSI) of India.</li> <li>2. Life Member of Indian Physics Teachers Association (IPTA).</li> <li>3. Member of International Nuclear Track Society.</li> <li>4. Life Member of Nuclear Track Society (NTSI) of India.</li> <li>5. Editor of Nuclear Track Society (NTSI) of India.</li> <li>6. Life Member of Soft Materials Research Society</li> <li>7. Executive Committee Member of Soft Materials Research Society</li> <li>8. Life Member of Indian Association of Nuclear Chemists and Allied Scientists (IANCAS)</li> </ol>
Any other Achievements	<ol style="list-style-type: none"> <li>1. Have been referee for many International and National Journals.</li> <li>2. Keynote Speaker/Invited Talks/Expert Lectures in National/International Conferences and other programs.</li> <li>3. Details of International/ National Conferences/Seminars in which chaired the sessions.</li> <li>4. Editorial Board Member-Current Chinese Science Journal.</li> <li>5. Editorial Board Member-Journal of Polymer Science and Engineering, USA.</li> <li>6. Previous Appointments as Assistant Professor of Physics at Ranchi University Ranchi, Jharkhand through Jharkhand Public Service Commission (JPSC)-2008 and Ch. Charan Singh University, Meerut as Associate Professor of Physics-2015.</li> <li>7. Total Research Publications in Journals/Conferences: 285.</li> </ol>

