



DESHBANDHU COLLEGE

(UNIVERSITY OF DELHI)

KALKAJI. NEW DELHI - 110019

Title	DR.	First Name	Ashwani Kumar	Last Name	Singh	Photograph
Designation	Assistant Profess (Physics)					
Address	Department of Physics Deshbandhu College (University of Delhi) Kalkaji New Delhi – 110019					
Residence	M-192/12 3 rd Floor, Shastri Nagar, New Delhi-110052					
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Email	imashwanikumar@gmail.com , asingh22@db.du.ac.in					
Web-Page	https://www.researchgate.net/profile/Ashwani_Singh10 , https://scholar.google.co.in/citations?user=Haix6TAAAAAJ&hl=en					
Educational Qualifications						
Degree	Institution				Year	
Ph.D.	Banaras Hindu University				2013	
PG	Deen Dayal Upadhyay Gorakhpur University				2006	
UG	Deen Dayal Upadhyay Gorakhpur University				2004	
Career Profile						
01.2021--- Till Date	Assistant Professor	Department of Physics Deshbandhu College (University of Delhi) Kalkaji New Delhi – 110019				
04.2019--- 12.2020	Research Scientist	School of Physical Sciences, Jawaharlal Nehru University Delhi-India				
10.2018--- 03.2019	CNPq Visiting Scientist (Postdoctoral Fellow)	Centre for Semiconductor Component & Nanotechnology (Nano) University of Campinas-UNICAMP Campinas 13083-870 Sao Paulo (SP), Brazil				
05.2015---05.2018	Dr. D. S. Kothari Postdoctoral Fellow	School of Physical Sciences, Jawaharlal Nehru University Delhi-India				
10.2014---05.2015	Assistant Professor	Sri Agrasen Girls Post Graduate College, Varanasi-India				
07.2013---10.2014	Postdoctoral Researcher	Banaras Hindu University, Department of Physics Varanasi-221005, India				
07.2009---03.2013	Researcher	Banaras Hindu University, Department of Physics Varanasi-221005, India				
Administrative Assignments						
General Secretary, Physics society, Deen Dayal Upadhyay Gorakhpur University-2005						
Areas of Interest/Specialization						

1. Study of 2D materials like graphene, MoS₂ and their various nanocomposites for various applications
2. Growth of few layer graphene by different routes.
3. Wrapped, anchored, encapsulated, mixed and layered nanostructures by GNSs for high specific supercapacitances.
4. Synthesis of graphene and its various variants for EMI Shielding applications.
5. Synthesis of MoS₂ nanosheets, MoS₂ quantum dots, WS₂ nanosheets, WS₂ quantum dots and their hybrid with graphene for enhanced hydrogen evolution reaction.
6. Graphene-CdSe quantum dots hybrid for various applications.
7. Micro-structural & structural characterizations and chemical analysis of materials.
8. Fundamental understanding of advance materials

Subjects Taught

Solid State Physics	Mechanics	Optics
B.Sc (H) PHYSICS (3 RD YEAR)	STATISTICAL PHYSICS	SOLID STATE PHYSICS
Modern Physics	Electricity and Magnetism	MODERN PHYSICS

Research Guidance

8 M.Sc. students for Dissertation

Publications Profile

- 1) Molybdenum Disulfide Wrapped Carbon Nanotube-Reduced Graphene Oxide (CNT/MoS₂-rGO) Nanohybrid for excellent and fast removal of Electromagnetic Interference Pollution
Ashwani Kumar Singh, Jagdees Prasad, Amar Nath Yadav, Ajit Kumar, Monika Tomar, Amit Srivastava, Pramod Kumar, Vinay Gupta, Kedar Singh
ACS Applied Materials & Interfaces 12, 40828–40837, 2020
- 2) Graphene-Induced Room Temperature Ferromagnetism in Cobalt Nanoparticles Decorated Graphene Nanohybrid
Amar Nath Yadav, **Ashwani Kumar Singh**, Pramod Kumar and Kedar Singh
Nanoscale research letters 15, 166, 2020
- 3) Evaluation of Dopant Energy and Stokes Shift in Cu-doped CdS Quantum Dots via Spectro-electrochemical Probing
Amar Nath Yadav, **Ashwani Kumar Singh**, Deepika Chauhan, Pratima Solanki, Pramod Kumar, Kedar Singh
New Journal of Chemistry 44, 13529-13533, 2020
- 4) Magnetic and dielectric properties of La and Ni co- substituted BiFeO₃ nanoceramics
Amit Srivastava, **Ashwani K. Singh**, O N. Srivastava, Khalid B. Masood, Jai Singh
Frontiers in Physics, 8, 882-888,2020
- 5) CdSe-V₂O₅ Reduced graphene oxide nanocomposite toxicity alleviation via V₂O₅ shell formation over CdSe core: in vivo and in vitro studies
Ashwani Kumar Singh, Amar Nath Yadav, Saurabh Srivastav, Rishi Kumar Jaiswal, Amit Srivastava, Amal Chandra Mondal, Kedar Singh
Nanotechnology, 31, 415101, 2020

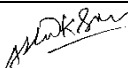
- 6) Electromagnetic interference shielding performance of lightweight NiFe₂O₄/rGO nanocomposite in X-band frequency range
Ajit Kumar, **Ashwani Kumar Singh**, Monika Tomar, Vinay Gupta, P. Kumar, Kedar Singh.
Ceramics International, 46, 15473-15481, 2020
- 7) CdSe/V₂O₅ Core/Shell Quantum Dots Decorated Reduced Graphene Oxide Nanocomposite for High-Performance Electromagnetic Interference Shielding Application
Ashwani Kumar Singh, Amar Nath Yadav, Amit Srivastava, Kamal Krishna Haldar, Monika Tomar, Andrei V. Alaferdov, Stanislav A. Moshkalev, Vinay Gupta, Kedar Singh
Nanotechnology, 30, 505704, 2019
- 8) Strong electromagnetic wave absorption and microwave shielding in the Ni–Cu@MoS₂/rGO composite
Jagdees Prasad, **Ashwani Kumar Singh**, Monika Tomar, Vinay Gupta, Kedar Singh
Journal of Materials: Science Materials in Electronics 30, 18666–18677, 2019.
- 9) Bio-inspired silver nanoparticles impose metabolic and epigenetic toxicity to *Saccharomyces cerevisiae*.
Piyooosh Kumar Babele, **Ashwani Kumar Singh** and Amit Srivastava
Front. Pharmacol. - Translational Pharmacology, 10, 1-15, 2019
- 10) CoFe₂O₄ nanoparticles decorated MoS₂-reduced graphene oxide nanocomposite for improved microwave absorption and shielding performance
Jagdees Prasad, **Ashwani Kumar Singh**, Krishna Kamal Haldar, Monika Tomar, Vinay Gupta and Kedar Singh
RSC Advance, 9, 21881-21892, 2019
- 11) Vanadium doped few layer ultrathin MoS₂ nanosheets on reduced graphene oxide for high performance hydrogen evolution reaction
Ashwani Kumar Singh, Jagdees Prasad, Uday Pratap Azad, Ashish Kumar Singh, Rajiv Prakash, Kedar Singh, Amit Srivastava, Andrei A. Alaferdov, Stanislav A. Moshkalev
RSC Advance, 9, 22232-22239, 2019
- 12) Lightweight reduced graphene oxide-ZnO nanocomposite for enhanced dielectric loss and excellent electromagnetic interference shielding.
Ashwani Kumar Singh, Ajit Kumar, Amar Nath Yadav, Amit Srivastava, Kamal Krishna Haldhar, Vinay Gupta, Kedar Singh.
Composite Part B 172, 234–242, 2019
- 13) Ultrafast Charge Carrier dynamics in CdSe/V₂O₅ core/shell Quantum Dots.
Amar Nath Yadav, **Ashwani Kumar Singh**, Bipin K Gupta, Kedar Singh
Physical Chemistry Chemical Physics 29, 6265, 2019.
- 14) Electromagnetic interference shielding effectiveness in 3D flower like Gd doped MoS₂-rGO composite.
Jagdees Prasad, **Ashwani K Singh**, Krishna K Halder, Vinay Gupta, Kedar Singh,
Journal of Alloy and Compound. 788, 861-872, 2019.
- 15) Self-assembled nanostructures of 3D hierarchical faceted-iron oxide containing vertical carbon nanotubes on reduced graphene oxide hybrids for enhanced electromagnetic interface shielding
Rajesh Kumar Andrei V. Alaferdov, Rajesh K. Singh, **Ashwani K. Singh**, Jyoti Shah, Ravinder K. Kotnala, Kedar Singh, Yoshiyuki. Suda, Stanislav A. Moshkalev
Composites Part B: Engineering 168, 66-76, 2019.
- 16) Surface modification of CdS Quantum Dots: An effective approach for improving Biocompatibility
Amarnath Yadav, Rahul Kumar, Rishi Jaiswal, Rishi; **Ashwani Kumar Singh**, Kedar Singh,
Materials Research Express 6, 055002, 2019.
- 17) Ultralightweight Graphene-Fe₃O₄ composite for the quest of excellent Electromagnetic Interference Shielding material
Ashwani Kumar Singh, Krishna Kamal Haldar, Vinay Gupta, and Kedar Singh
Nanotechnology 29, 245203, 2018.
- 18) An effective approach to study the biocompatibility of Fe₃O₄ nanoparticles, graphene and their nanohybrid composite
Ashwani Kumar Singh, Pallavi Singh, Amit Srivastava, Suresh Yadav, Kedar Singh and Rajiv Kumar Verma

- Applied nanoscience* 8, 831, 2018.
- 19) Optical properties of Highly Luminescent, Monodisperse, and Ultrastable CdSe/V₂O₅ Core/Shell Quantum Dots for In-Vitro imaging
Amar Nath Yadav, **Ashwani Kumar Singh**, Prem Prakash Sharma, Pratima R Solanki, Kedar Singh.
Journal of Materials Science: Materials in Electronics 29, 1850-1859, 2018.
 - 20) Synthesis of MoS₂ –reduced graphene oxide/Fe₃O₄ nanoparticles for enhanced electromagnetic interference shielding effectiveness
Jagdeesh Prasad, **Ashwani Kumar Singh**, Jyoti Shah, R.K.Kotnala, Kedar Singh
Materials research express 5, 055028, 2018.
 - 21) Improved Antifungal Activity of ZnO Nanoparticles Biosynthesized Using Black Cardamom
Ashwani Kumar Singh, Pallavi Singh, Amit Srivastava
International Journal of Current Advanced Research 6, 5855, 2017.
 - 22) Antibacterial Fe₃O₄ nanoparticles: synthesis and characterization
Ashwani Kumar Singh, Pallavi Singh, Amit Srivastava
International Journal of Engineering Research and Application 7, 32, 2017.
 - 23) Silver Nanoparticles/Gelatin Composite: A New Class of Antibacterial Material
Ashwani Kumar Singh, Manish Tripathi, Onkar Nath Srivastava, and Rajiv Kumar Verma
Chemistry Select 2, 7233, 2017.
 - 24) Facile and single step synthesis of three-dimensional reduced graphene oxide-NiCoO₂ composite using microwave for enhanced electron field emission properties
Rajesh Kumar, Rajesh K. Singh, **Ashwani Kumar Singh**, Alfredo R. Vaz, Chandra S. Rout, Stanislav A. Moshkaleva
Applied Surface Science, 416, 259, 2017.
 - 25) Shape and Size-dependent magnetic properties of Fe₃O₄ Nanoparticles Synthesized Using Piperidine
Ashwani Kumar Singh, O. N. Srivastava and Kedar Singh.
Nanoscale research letters 12, 298, 2017
 - 26) One step green synthesis of gold nanoparticles with tunable shape and sizes using black cardamom extract and effect of pH on its synthesis
Ashwani Kumar Singh, O. N. Srivastava
Nanoscale research letters 10, 353, 2015.
 - 27) Enhanced antilipopolsaccharide (LPS) induced changes in macrophage functions by Rubia cordifolia (RC) embedded with Au nanoparticles
Ashwani kumar Singh, Yamini B. Tripathi, Nidhi Pandey, D. P. Singh, O. N. Srivastava
Free radicals: Biology and medicine 65, 674, 2013.
 - 28) Response surface analysis of nano-ureases from *Canavalia ensiformis* and *Cajanus cajan*
Alka Dwevedi, Satya Brata Routh, Amit Singh Yadav, **Ashwani Kumar Singh**, Onkar Nath Srivastava, Arvind M. Kayastha
International Journal of Biological macromolecules 49, 674, 2011.
 - 29) Optimization of process variables by central composite design for the immobilization of Urease enzyme on functionalized gold nanoparticles for various applications
Mahe Talat, **Ashwani Kumar Singh**, O. N. Srivastava,
Bioprocess Biosyst Eng 34, 647, 2011.
 - 30) Biosynthesis of gold and silver nanoparticles by natural precursor clove and their functionalization with amine Group
Ashwani Kumar Singh, D. P. Singh, Mate Talat, O. N. Srivastava,
Journal of nanoparticle research 12, 1667, 2010.
 - 31) Lactose nano-probe optimized using response surface methodology
Alka Dwevedi, **Ashwani Kumar Singh**, D. P. Singh, O. N. Srivastava, Arvind M. Kayastha,
Biosensors and Bioelectronics 25, 784, 2009.

Book and Book Chapters

- 1) Studies on Metal & Metal Oxide Nanoparticles and Carbon Nanostructures
Ashwani Kumar Singh, ISBN No. 978-620-2-06776-8 Lambert Academic Publications.

<p>2) Synthesis of Fe₃O₄ nanoparticles and its composite with graphene, <i>Advances in Multifunctional Materials</i>, Ideal Book Publishers- Ashwani Kumar Singh, 2017</p> <p>3) Synthesis, Properties, and Applications of II–VI Semiconductor Core/Shell Quantum Dots Amar Nath Yadav, Ashwani Kumar Singh, Kedar Singh Core/Shell Quantum Dots, Springer, 1-28, 2020</p>
<p>Conference Organization/ Presentations/Schools</p> <ul style="list-style-type: none"> ✓ EMSI International Conference on Electron Microscopy, 17-19 July 2017 IGCAR Kalapakkam ✓ EMSI International Conference on Electron Microscopy, 2-4 June 2016 BHU Varanasi ✓ International Conference on Recent Advances in Analytical Sciences, 7-9 April-2016 ✓ Winter School-2015 on Frontiers of Materials Sciences. 5-10 Dec 2015, JNCASR, Bangalore ✓ I10th NANOSMAT conference, Poster presentation, 13-16 September 2015, Manchester.U.K. ✓ International conference on Nanomaterials with Special Reference to Energy Security (NMES). 12-14 March 2014. BHU ✓ Winter School on Practical Crystallography and Structure Solution. 5-11 March 2014. BHU, Varanasi. ✓ Fifth International Conference on Electroactive Polymers: Materials And Device. Poster Presentation. 4-9 Nov 2012. BHU, Varanasi ✓ Workshop on Nano and Advanced Materials and their Applications, (WONAMA-2012). 10-16 April 2012 ✓ International Conference on Nanoscience and Technology (ICONSAT-2012). Poster Presentation. 20-23 January 2012. Hyderabad ✓ India First International Conference on Composites and Nanocomposites (ICNC-2011) 7-9 January 2011 Cottayam Kerla ✓ Winter School on Chemistry and Physics of Materials. 5-10 December 2011, JNCASR Bangalore
<p>Research Projects (Major Grants/Research Collaboration)</p> <ul style="list-style-type: none"> ✓ Successfully completed F.42/2006 (BSR)/PH/1415/0078 award from UGC India. Project title “Synthesis and characterization of graphene decorated with metal (Au and Ag), metal oxide (Fe₃O₄), and core-shell nanoparticles and its application as sensors and supercapacitor” ✓ Successfully completed 151290/2018-0 award from CNPq Brazil. Project title “Microwave-assisted three-dimensional graphene-metal oxides based hierarchical nanostructures for energy storage”
<p>Awards and Distinctions</p> <ul style="list-style-type: none"> ✓ 10/2018 CNPq PDF, CCS Nano, Unicamp-Brazil ✓ 2015-09/2018 UGC-Dr. D S Kothari Postdoctoral Fellowship (UGC, India) ✓ 2013-2014 CSIR Senior Research Fellow (CSIR, New Delhi, India) ✓ 2009-2013 Research Fellowship in Sciences for Meritorious Students (UGC) ✓ 2007 and 2008 Qualified National level exam GATE ✓ 2015 DST international travel grant for attending NANOSMAT, international conference in Manchester, UK
<p>Association With Professional Bodies</p> <p><i>1. Life member- Electron Microscope Society of India</i></p>
<p>Other Activities</p>


 Signature of Faculty
 Member

