

# Dr. Naveen Kumar

**Associate Professor**

Department of Chemistry

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<https://www.researchgate.net/profile/Naveen-Kumar-64/research>

[https://scholar.google.com/citations?user=ml9Vej4AAAAJ&view\\_op=list\\_works&sortby=pubdate](https://scholar.google.com/citations?user=ml9Vej4AAAAJ&view_op=list_works&sortby=pubdate)

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Date of Birth:	17-10-1980
Field of Specialization:	Chemistry
Teaching Experience:	13 Years
Research Experience	19 Years
Field of Research Interest	<b>Photocatalysis, Nano-Composite materials, Electrochemical Sensing, Solution Thermodynamics, Phosphor Materials</b>
Personality traits	Enthusiastic, responsible, able to work independently using initiative, and as part of a team with a positive attitude. Proficient in teaching with innovative ideas.

## **Academic Awards/Achievements**

- Qualified GATE (Graduate Aptitude Test in Engineering) in 2004.
- Qualified UGC-JRF NET for fellowship and lectureship in June 2004.

## **Educational qualifications**

<b>Degree</b>	<b>Year of passing</b>	<b>University/ Institute</b>
<b>Ph. D</b>	2009	M. D. University, Rohtak, Haryana, India
<b>M. Sc.</b>	2004	M. D. University, Rohtak, Haryana, India
<b>B. Sc.</b>	2001	M. D. University, Rohtak, Haryana, India

### Academic Societies Membership

- Life Member Indian Science Congress Association, Kolkata.
- Life Member Indian Chemical Society, Kolkata.
- Life Member Indian Thermodynamic society
- Indian Analytical Congress, UK, India
- Life member Material Research Society of India

### Career profile

Designation	Institute	Duration	
		From	To
Lecturer	Haryana Institute Of Technology, Asoda Haryana	July 2008	December 2008
Assistant Professor	Department of Chemistry, M.D. University, Rohtak	May 1, 2010	April 30, 2022
Associate Professor	Department of Chemistry, M.D. University, Rohtak	May 1, 2022	Till date

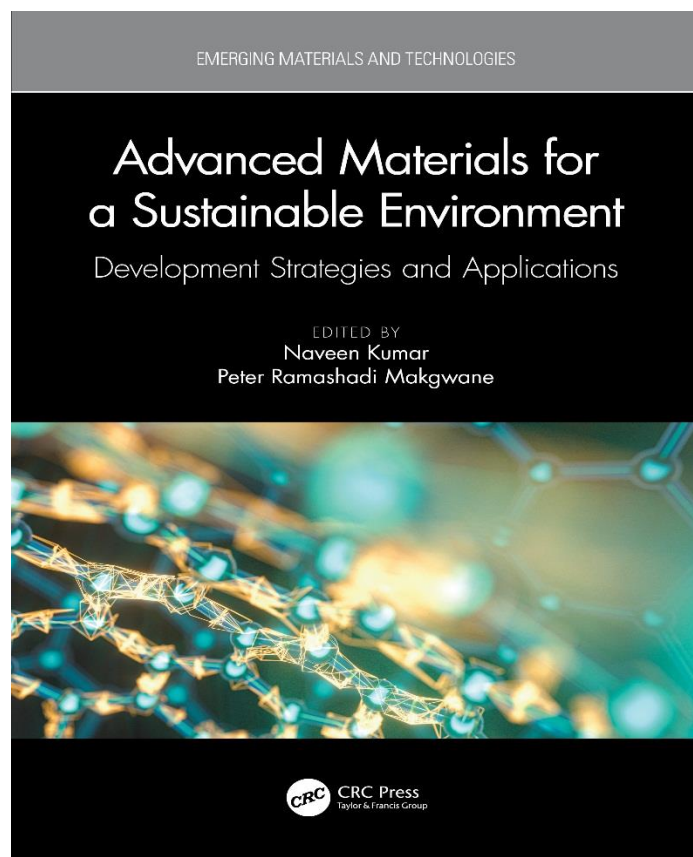
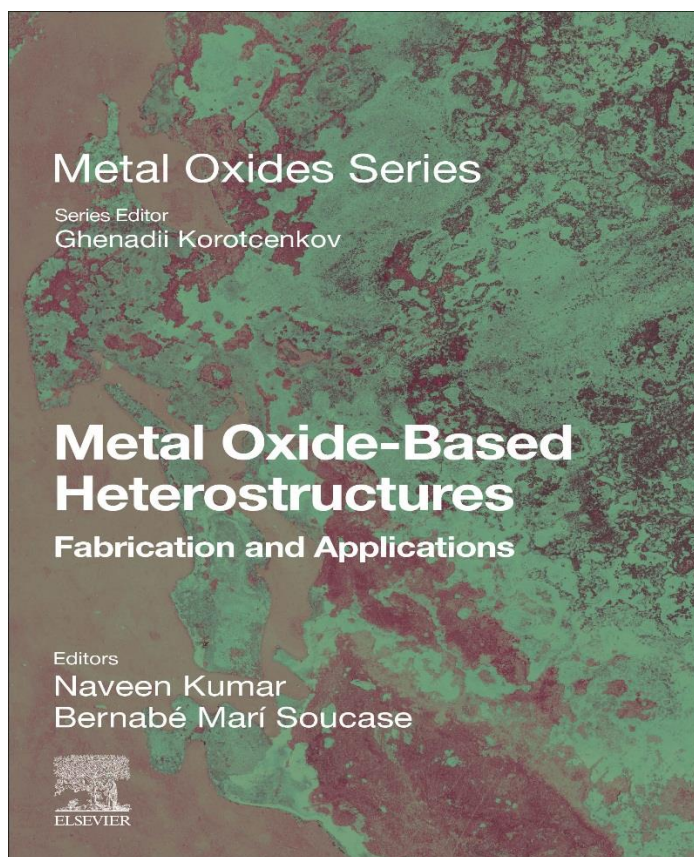
### Project undertaken

Title of the project	Duration	Funding agency	Status
<b>Anodic Oxide Films on Metals and Alloys</b>	2011-2014	UGC, New Delhi	Completed
<b>Photocatalytic Activity of ZnO composite on degradation of synthetic dye</b>	2017-18	DSW, M D U Rohtak	Completed
<b>Hybrid TiO<sub>2</sub> based Nanostructures: Synthesis, Characterization and their Photo catalytic activity</b>	2018-19	DSW, M D U Rohtak	Completed
<b>ZnO based hybrid materials – Synthesis, Characterization and application for degradation of pesticides</b>	2019-20	DSW, M D U Rohtak	Completed
<b>Synthesis and Characterization of Mixed metal oxide Semiconductor nano-composites for Environmental remediation</b>	2020-21	DSW, M D U Rohtak	Completed

### Publications

Research articles in published	109 (Published) + 2 (Communicated) (Annexure A)
Book Chapters	7 (Annexure B)
Book:	2 (As Editor) (Publisher: Elsevier-01, CRC-01)

- (i) **Metal Oxide based heterostructures : Fabrication and Applications**  
Editors: Naveen Kumar, Bernabe Mari Soucase  
<https://www.elsevier.com/books/metal-oxide-based-heterostructures/kumar/978-0-323-85241-8>
- (ii) **Advanced Materials for a Sustainable Environment: Development Strategies and Applications**  
Editors: Naveen Kumar, Peter Ramashadi Makgwane  
<https://www.routledge.com/Advanced-Materials-for-A-Sustainable-Environment-Development-Strategies/Kumar-Makgwane/p/book/9781032073057>



Participation in conferences/seminars

17 (Annexure C)

## Research Guidance

Ph. D: Awarded 7, Guiding - 4

## **Awarded**

[1] Jitender Jindal                      Supervisor: Dr. Naveen Kumar                      Year: 2016

**Title: Fabrication and characterization of anodic oxide film on valve metals**

[2] Anuj Mittal                              Supervisor: Dr. Naveen Kumar                      Year: 2020

**Title: Synthesis, Characterization and Photocatalytic Activity of the TiO<sub>2</sub> Based Materials for Environmental Applications**

[3] Suprabha Yadav                      Supervisor: Dr. Naveen Kumar                      Year: 2020

**Title: Photocatalytic Degradation of Environmental Pollutants by Zinc Oxide Based Materials**

[4] Vijaya Kumari                      Supervisor: Dr. Naveen Kumar                      Year: 2021

**Title: Synthesis, Characterization and Photocatalytic Applications of ZnO and ZnO Based Hybrid Materials**

[5] Shankar                              Supervisor: Dr. Naveen Kumar                      Year: 2022

**Title: Photocatalytic and biological application studies of titanium dioxide-based materials**

[6] Deepak                              Supervisor: Dr. Naveen Kumar                      Year: 2023

**Title: Thermo-physical properties of aqueous and non-aqueous fluids: Experimental and theoretical investigations**

[7] Anuradha                              Supervisor: Dr. Naveen Kumar                      Year: 2023

**Title: Hybrid composite materials for environmental remediation-Thermodynamic, Adsorption and Photocatalytic aspects**

## **In Progress**

[8] Shruti Jain                              Supervisor: Dr. Naveen Kumar

**Title: Hybrid nanocomposite materials: Synthesis, characterization and their potential application in environment**

[9] Monika Kumari                      Supervisor: Dr. Naveen Kumar

**Title: Development of multifunctional nanocomposite materials and their application in environment and energy**

[10] Swati                              Supervisor: Dr. Naveen Kumar

**Title: Structural engineering of multicomponent nanostructures for environment and sensing applications**

## **International Visits:**

- Visited Department of applied Physics, University of Politecnica, Valencia, Spain on FP7/IRSES for research work in the international research project entitled as “**DEVELOPMENT OF A NEW GENERATION CIGS BASED SOLAR CELLS**” [NANICIS-269279] in 2013 and 2014.

## **Assignments in M D University, Rohtak**

- **Deputy Director**, Internal Quality assurance Cell (IQAC)
- **Mentor-Mentee Coordinator**, Department of Chemistry, M.D.U, Rohtak
- **Deputy Coordinator**, Special Assistance Programme (SAP) UGC, New Delhi
- **Coordinator**, Alumni Department of Chemistry, M.D.U, Rohtak
- Science Conclave 2011, organized by M.D.U. Rohtak and DST, Govt. of Haryana from Dec. 2-3, 2011. (**Organizer**)

- National Conference on Advances in Chemical Sciences (ACS-2013) organized by Department of Chemistry, M. D. University, Rohtak sponsored by Indian Society of Analytical Scientists –Delhi Chapter (ISAS-DC). **(Organizer)** March 1-2, 2013
- Science Conclave 2014, organized by M.D.U. Rohtak and DST, Govt. of Haryana from Feb. 22-23, 2014. **(Organizer)**
- National Conference on Recent Advances in Chemical Sciences NCRACS-2018, organized by Dept. of Chemistry, M.D. University, Rohtak on March 7, 2018. **(Organizer)**
- 1 st National Conference of Indian Science Congress Association – Rohtak Chapter on “Science and Technology for Sustainable Development” on 12th and 13th February 2019 held at Chem. Dept. M.D.U. Rohtak. **(Organizer)**
- 1 st National conference of Indian Science Congress Association – Rohtak Chapter on “Science & Technology for Sustainable Development” (NCSTSD – 2019) organized by Chemistry Department, M.D. University, Rohtak on Feb. 12-13, 2019. **(Organizer)**
- 2 nd National Conference in Association with ISCA – Rohtak Chapter sponsored by UGC-SAP on “Science and Technology for Rural Development” on 14th and 15th October 2019 held at Chem. Dept. M.D.U. Rohtak. Participated **(Organizer)**
- National Conference entitled " Recent Trends in Materials & Life Sciences" (RTMLS-2023) on September 29, 2023**(Organizer)**
- **Organizing Secretary:** One Day Workshop on NAAC Documentation for UTDs 14th November, 2022
- **Organizing Secretary:** One Day Workshop (Faculty wise) on Basic Contours of NEP- 2020 9 th-12th January, 2023
- **Organizing Secretary:** One Day Workshop (Faculty wise) on Curriculum and Credit Framework for Undergraduate Programme, 25.03. 2023, 01.04.2023, 08.04.2023
- **Coordinator:** Intellectual Property Awareness program under National Intellectual Property Awareness Mission

(Annexure A)

## List of Publications

1. **An energy saving and water-based synthesis of Bi<sub>2</sub>O<sub>3</sub>@Fe-succinate MOF: A visible light mediated approach towards water decontamination**, Anuradha Sharma, Monika Kumari, Muhammad Tahir, Shruti Jain, Shankar Sharma, **Naveen Kumar**, Journal of Molecular Liquids, Volume 386, 15 September 2023, 122429  
<https://doi.org/10.1016/j.molliq.2023.122429> **Impact factor: 6**
2. **Highly Stable Photocatalytic Dry and Bi-Reforming of Methane with the Role of a Hole Scavenger for Syngas Production over a Defective Co-Doped g-C<sub>3</sub>N<sub>4</sub> Nanotexture**, Muhammad Tahir, Azmat Ali Khan, Abdullah Bafaqeer, **Naveen Kumar**, Mohammad Siraj, Amanullah Fatehmulla, Catalysts, 13(7), 2023, 1140  
<https://doi.org/10.3390/catal13071140> **Impact factor:3.9**
3. **Development of TiO<sub>2</sub>/Bi<sub>2</sub>O<sub>3</sub>/PANI as a novel glucose biosensor and antimicrobial agent**, Shankar Sharma, Pinki Sharma, Anuj Mittal, Anuradha Sharma, David E. Motaung, Nar Singh Chauhan, **Naveen Kumar**, Inorganic Chemistry Communications, Volume 155, September 2023, 110994  
<https://doi.org/10.1016/j.inoche.2023.110994> **Impact factor: 3.8**

4. **Catalytic and antioxidant activity of silver nanoparticles fabricated by Neolamarckia cadamba bark extract**, Anu Bala, Gita Rani, **Naveen Kumar**, Rachna Ahlawat, International Journal of Phytoremediation, Volume 25, 2023 - Issue 14  
<https://doi.org/10.1080/15226514.2023.2214243> **Impact factor: 3.7**
5. **Volumetric, Viscometric, Acoustic, and Optical Properties of Ternary Liquid Mixtures Containing 1-Propanol, 1,3-Diaminopropane, and Methyl Acetate at Temperatures of 298.15–318.15 K**, Deepak Parmar, Manju Rani, **Naveen Kumar**, Nouredine Issaoui, Omar M. Al-Dossary, Kavitha Kumari, Shruti Jain, Leda G Bousiakoug, Journal of Chemical & Engineering Data, 2023, 68, 9, 2189–2197  
<https://doi.org/10.1021/acs.jced.3c00244> **Impact factor: 2.6**
6. **Graphene oxide modified K, P co-doped g-C<sub>3</sub>N<sub>4</sub> and CoFe<sub>2</sub>O<sub>4</sub> composite for photocatalytic degradation of antibiotics**, Rohit Kumar, Anita Sudhaik, Sonu, Van-Huy Nguyen, Quyet Van Le, Tansir Ahamad, Sourbh Thakur, **Naveen Kumar**, Chaudhery Mustansar Hussain, Pardeep Singh, Pankaj Raizada, Journal of the Taiwan Institute of Chemical Engineers, Volume 150, September 2023, 105077  
<https://doi.org/10.1016/j.jtice.2023.105077> **Impact factor: 5.7**
7. **Titanium Carbide MXenes Cocatalyst with Graphitic Carbon Nitride for Photocatalytic H<sub>2</sub> Production, CO<sub>2</sub> Reduction, and Reforming Applications: A Review on Fundamentals and Recent Advances**, Abdelmoumin Yahia Zerga, Muhammad Tahir, Hajar Alias, **Naveen Kumar**, Energy & Fuels, 2023, 37, 17, 12623–12664  
<https://doi.org/10.1021/acs.energyfuels.3c01887> **Impact factor: 5.3**
8. **Performance analysis of rGO-bridged g-C<sub>3</sub>N<sub>4</sub>/ZnV<sub>2</sub>O<sub>6</sub> S-scheme heterojunction for CO<sub>2</sub> photoreduction with H<sub>2</sub>O in an externally reflected photoreactor**, Abdullah Bafaqeer, Muhammad Tahir, Nor Aishah Saidina Amin, Aniz Chennampilly Ummer, Hammam Abdurabu Thabit, Duraisami Dhamodharan, Shakeel Ahmed, **Naveen Kumar**, Journal of Alloys and Compounds, Volume 968, 15 December 2023, 171833  
<https://doi.org/10.1016/j.jallcom.2023.171833> **Impact factor: 6.2**
9. **A facile synthesis of Ag incorporated Bi<sub>2</sub>O<sub>3</sub>/CuS nanocomposites as photocatalyst for degradation of environmental contaminants**, Shruti Jain, Anuradha Sharma, Suprabha Yadav, **Naveen Kumar**, Hariom Dahiya, Peter R. Makgwane, Ahmad Hosseini Bandegharai, Jitender Jindal, Inorganic Chemistry Communications, Volume 155, September 2023, 110994  
<https://doi.org/10.1016/j.inoche.2023.111266> **Impact factor: 3.8**
10. **Viscosities of 1,2-DAP + alkyl acetates binary liquid mixtures at T = 298.15–318.15 K: Theoretical interpretation by Graph theoretical approach (GTA) and Bloomfield and Dewan (BFD) model**, Deepak Parmar, Manju Rani, **Naveen Kumar**, Umesh Bhardwaj, Omar M. Al-Dossary, Nouredine Issaoui, Mustapha Sahal, Pinki Kashyap, The Journal of Chemical Thermodynamics, Volume 188, January 2024, 107177  
<https://doi.org/10.1016/j.jct.2023.107177> **Impact factor: 2.6**
11. **A facile synthesis of Bi<sub>2</sub>O<sub>3</sub>/SnS<sub>2</sub> and Ag@Bi<sub>2</sub>O<sub>3</sub>/SnS<sub>2</sub> nanostructures and their enhanced photodegradation application toward RhB**,

S. Jain, **N. Kumar**, S. Sharma, D. Parmar, R.K. Sharma, M. Tahir, K. Kumari, G. Rani, *Materials Today Sustainability*, Volume 24, December 2023, 100539  
<https://doi.org/10.1016/j.mtsust.2023.100539> **Impact factor: 7.8**

12. **Investigating the impact of structural defects in MWCNT/MnFe<sub>2</sub>O<sub>4</sub> nanocomposite for efficient photodegradation of cationic dye**, Monalisa Hazarika, S. Sellaiyan, S. Jimkeli Singh, J.P. Borah, **Naveen Kumar**, P. Chinnamuthu, *Physica B: Condensed Matter*, Volume 675, 15 February 2024, 415598  
<https://doi.org/10.1016/j.physb.2023.415598> **Impact factor: 2.8**

13. **Bonding and noncovalent interactions effects in 2,6-dimethylpiperazine-1,4-dium oxalate oxalic acid: DFT calculation, topological analysis, NMR and molecular docking studies**, Mouna Medimagh, Cherifa Ben Mleh, Nouredine ISSAOUI, Murugesan Raja, Aleksandr S. Kazachenko, Omar M. Al-Dossary, Thierry Roisnel, **Naveen Kumar**, Houda Marouani, *Zeitschrift für Physikalische Chemie*, 2023  
<https://doi.org/10.1515/zpch-2023-0354> **Impact factor: 2.4**

14. **Experimental analysis of volumetric, acoustic, viscometric and optical properties of water with 1-amino-2-propanol, 1,2-diaminopropane and 1,3-diaminopropane at T=298.15 -318.15 K: Molecular Modelling by Graph, PFP and IR spectroscopy investigations**, Deepak Parmar, **Naveen Kumar**, Manju Rani, Omar M. Al-Dossary, Nouredine Issaoui, Leda G. Bousiakoug, Mustapha Sahal, Sudesh Choudhary, *Journal of the Taiwan Institute of Chemical Engineers*, Volume 153, December 2023, 105217  
<https://doi.org/10.1016/j.jtice.2023.105217> **Impact factor: 5.7**

15. **Co<sup>2+</sup>, Ni<sup>2+</sup>, Cu<sup>2+</sup> doped Indium oxide as visible active nano-photocatalyst: A facile solution combustion synthesis, electronic band structure analysis by DFT approach and photocatalytic decontamination of RhB and Triclopyr**, Anuradha Sharma, **Naveen Kumar**, W.A. Diery, Elie A. Moujaes, Anuj Mittal, Pardeep Singh, Shankar Sharma, *Journal of Molecular Liquids*, Volume 392, Part 1, 15 December 2023, 123508  
<https://doi.org/10.1016/j.molliq.2023.123508> **Impact factor: 6**

16. **Integrating Ni, Pt, and Pd on Biphasic Cu-Doped Bi<sub>2</sub>O<sub>3</sub> for Physicochemical Characteristics and Superior Light Driven Elimination of Pollutants**, Anuradha Sharma, Anuj Mittal, Shankar Sharma, Muhammad Tahir, Deepak Parmar, Pardeep Singh, **Naveen Kumar**, *Catalyst Survey from Asia* (2023)  
<https://doi.org/10.1007/s10563-023-09411-0> **Impact factor: 3.0**

17. **Promising bioactive properties of (2R,5S)-2,5-dimethylpiperazine-1,4-dium dinitrate material: experimental, theoretical and in silico investigation**, Sofian Gatfaoui, Nouredine ISSAOUI, Aleksandr S. Kazachenko, Omar M. Al-Dossary, **Naveen Kumar**, Thierry Roisnel, Houda Marouani, Anna S. Kazachenko, Yuriy N. Malyar, *Zeitschrift für Physikalische Chemie*, 2023  
<https://doi.org/10.1515/zpch-2023-0333> **Impact factor: 2.4**

18. **Improved charge transfer and enhanced visible light photocatalytic activity of Bi<sub>2</sub>O<sub>3</sub>@Fe-MOF for degradation of Rhodamine B and Triclopyr**, Anuradha Sharma, Muhammad Tahir, Tansir Ahamad, Naveen Kumar, Shankar Sharma, Monika Kumari, M.A.

Majeed Khan, Sourbh Takhur, Pankaj Raizada, Journal of King Saud University - Science, Volume 35, Issue 10, December 2023, 102922

<https://doi.org/10.1016/j.jksus.2023.102922>

**Impact factor: 3.8**

19. **A Recent development in Ag<sub>3</sub>VO<sub>4</sub> based photocatalysts towards environmental remediation: Properties, Synthesis, Strategies and Applications**, Akanksha Chauhan, Sonu, Pankaj Raizad, Pardeep Singh, Tansir Ahamad, Van-Huy Nguyen, Quyet Van Le, Aftab Aslam Parwaz Khan, **Naveen Kumar**, Anita Sudhaik, Chaudhery Mustansar Hussain, Journal of Industrial and Engineering Chemistry, Volume 130, 25 February 2024, Pages 25-53

<https://doi.org/10.1016/j.jiec.2023.09.042>

**Impact factor: 6.1**

20. **Experimental and theoretical evaluation of interactions in liquid mixtures consisting bio-based solvent and 2-alkoxyethanols through viscometric study**, Pooja Devi, Pooja Rani, **Naveen Kumar**, Jyoti Kataria, Journal of Molecular Liquids, Volume 390, Part B, 15 November 2023, 123056

<https://doi.org/10.1016/j.molliq.2023.123056>

**Impact factor: 6**

21. **A facile synthesized Z-scheme Bi<sub>2</sub>O<sub>3</sub>/SnS/Ag ternary nanocomposite: An expedited visible photocatalysis by plasmonic silver for efficient organic decontamination**, Shruti Jain, Anuj Mittal, Vijaya Kumari, Anuradha Sharma, Jitender Jindal, Peter R. Makgwane, Vinod Kumar, **Naveen Kumar**, Kavitha Kumari, Optical Materials, Volume 145, November 2023, 114434

<https://doi.org/10.1016/j.optmat.2023.114434>

**Impact factor: 3.9**

22. **TiO<sub>2</sub>/Bi<sub>2</sub>O<sub>3</sub>/PANI nanocomposite materials for enhanced photocatalytic decontamination of organic pollutants**, Shankar Sharma, Anuradha Sharma, Nar Singh Chauhan, Muhammad Tahir, Kavitha Kumari, Anuj Mittal, **Naveen Kumar**, Inorganic Chemistry Communications, Volume 155, September 2023, 110994

<https://doi.org/10.1016/j.inoche.2022.110093>

**Impact factor: 3.8**

23. **Viscosity, Heat Capacity and refractive index studies for binary liquid mixtures containing 1,3-Diaminopropane and alkyl acetates: experimental and theoretical interpretation**, Deepak Parmar, Kavitha Kumari, **Naveen Kumar**, Manju Rani, Mustapha Sahal, Sanjeev Maken, Journal of Chemical Thermodynamics, 2023, 107065

<https://doi.org/10.1016/j.jct.2023.107065>

**Impact factor:**

**3.269**

24. **Recent advances in synthesis, structural properties, and regulation of nickel sulfide-based heterostructures for environmental water remediation: an insight review**, Anuradha Sharma, Peter R. Makgwane, Eric Lichtfouse, **Naveen Kumar**, Ahmad Hosseini Bandegharai & Muhammad Tahir, Environmental Science and Pollution Research (April 2023)

<https://doi.org/10.1007/s11356-023-27093-z>

**Impact factor:**

**5.190**

25. **Thermophysical properties of 2-amino-2-methylpropan-1-ol + alkanol mixtures: Investigation of molecular interactions by insight of FT-IR spectroscopy**, Sweet Verma,



Payal Bhagat, Suman Gahlyan , Manju Rani, **Naveen Kumar**, Rajesh Kumar Malik, Yongjin Lee, Sanjeev Maken, Journal of Molecular Liquids, 382, 2023, 121967  
<https://doi.org/10.1016/j.molliq.2023.121967> **Impact factor:**  
**6.663**

26. **Synergistic effect of gold NPs modified graphitic carbon nitride nanotubes (g-CNT) with the role of hot electrons and hole scavengers for boosting solar hydrogen production**, Beenish Tahir, Muhammad Tahir, **Naveen Kumar**, International Journal of Hydrogen Energy, 2023, 48(2)  
<https://doi.org/10.1016/j.ijhydene.2022.12.330> **Impact factor:**  
**7.139**

27. **New Sb<sub>2</sub>Se<sub>3</sub>-based solar cell for achieving high efficiency theoretical modeling** Abdelaziz Ait Abdelkade, Mustapha Sahal, Essaadia Oublal, **Naveen Kumar**, Abdellah Benami, Optical and Quantum Electronics, 2023, 55:514  
<https://doi.org/10.1007/s11082-023-04797-7> **Impact factor: 2.794**

28. **Experimental, theoretical, computational and spectroscopic analysis in binary liquid mixtures containing 1-propanol and C-1 to C-4 alkyl acetates (T = 298.15–318.15 K): Physicochemical properties and molecular interaction studies**, Deepak Parmar, Nuha Wazzan, **Naveen Kumar**, Manju Rani, Nouredine Issaoui, Journal of Molecular Liquids, 1 July 2023, Volume 381, 121829  
<https://doi.org/10.1016/j.molliq.2023.121829> **Impact factor: 6.633**

29. **Investigations on the non-covalent interactions, drug-likeness, molecular docking and chemical properties of 1,1,4,7,7- pentamethyldiethylenetriammonium trinitrate by density-functional theory**, Mouna Medimagh, Nouredine Issaoui, Sofian Gatfaoui, Aleksandr S. Kazachenko, Omar M. Al-Dossary, **Naveen Kumar**, Houda Marouani, Leda G. Bousiakoug, Journal of King Saud University – Science, May 2023, Volume 35, Issue 4, 102645  
<https://doi.org/10.1016/j.jksus.2023.102645> **Impact factor: 3.829**

30. **TiO<sub>2</sub>-CeO<sub>2</sub> assisted heterostructures for photocatalytic mitigation of environmental pollutants: A comprehensive study on band gap engineering and mechanistic aspects** Vijaya Kumari, Anuradha Sharma, **Naveen Kumar**, Mika Sillanpää, Peter R. Makgwane, Md. Ahmaruzzaman, Ahmad Hosseini-Bandegharae, Manju Rani, P. Chinnamuthu, Inorganic Chemistry Communications, May 2023, Volume 151, 110564  
<https://doi.org/10.1016/j.inoche.2023.110564> **Impact factor: 3.428**

31. **MOF based composites with engineering aspects and morphological developments for photocatalytic CO<sub>2</sub> reduction and hydrogen production: A comprehensive review** Muhammad Tahir, Bilkis Ajiwokewu, Anifat Adenike Bankole, Ola Ismail, Hebah Al-Amadi, **Naveen Kumar**, Journal of Environmental Chemical Engineering, April 2023, Volume 11, Issue 2, 109408  
<https://doi.org/10.1016/j.jece.2023.109408> **Impact factor: 7.968**

32. **Co<sup>2+</sup>, Ni<sup>2+</sup> and Cu<sup>2+</sup> incorporated Bi<sub>2</sub>O<sub>3</sub> nano photocatalysts: Synthesis, DFT analysis of band gap modification, adsorption and photodegradation analysis of rhodamine B and Triclopyr.** Anuradha Sharma, Shankar Sharma, **Naveen Kumar**, W.A. Diery, Elie A. Moujaes, Muhammad Tahir, Pardeep Singh, Environmental Research, 2023, 116478.  
<https://doi.org/10.1016/j.envres.2023.116478> **Impact factor: 8.3**
33. **Thermophysical properties of N-isopropyl-2-propanamine+alkanol (C1-C3) mixtures as adsorbents for carbon dioxide capture,** Sweety Verma, Payal Bhagat, Suman Gahlyan, Manju Rani, **Naveen Kumar**, Rajesh Kumar Malik, Yongjin Lee & Sanjeev Maken, Korean Journal of Chemical Engineering, 2023.  
<https://doi.org/10.1007/s11814-023-1422-2> **Impact factor: 2.7**
34. **Liquid amine functional, aqueous blends and the CO<sub>2</sub> absorption capacity: Molecular structure, size, interaction parameter and mechanistic aspects,** Monika Kumari, Fernanodo Vega, Luz M. Gallego Fernandez, Krushna Prasad Shadangi, **Naveen Kumar**, Journal of Molecular Liquids, August 2023, Volume 384,122288  
<https://doi.org/10.1016/j.molliq.2023.122288> **Impact factor: 6.633**
35. **Molecular interaction analysis and transport properties of binary liquid mixtures containing 1-Amino-2-propanol and alkyl acetates at T = 298.15–318.15 K: Application of Graph theory and DFT studies,** Deepak Parmar, Manju Rani, **Naveen Kumar**, Nouredine ISSAOUI, Omar M. Al-Dossary, Kavitha Kumari, Mustapha Sahal, Leda G. Bousiakoug, Journal of Saudi Chemical Society, July 2023, Volume 27, Issue 4, 101656  
<https://doi.org/10.1016/j.jscs.2023.101656> **Impact factor: 5.6**
36. **Graphitic carbon nitride (g-C<sub>3</sub>N<sub>4</sub>)–assisted materials for the detection and remediation of hazardous gases and VOCs,** **Naveen Kumar**, Monika Kumari, Mohammed Ismael, Muhammad Tahir, Raj Kishore Sharma, Kavitha Kumari, Janardhan Reddy Koduru, Pardeep Singh, Environmental Research, August 2023, Volume 231, 116149  
<https://doi.org/10.1016/j.envres.2023.116149> **Impact factor: 8.3**
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103. **Porous anodic alumina film formation in oxalic and phosphoric acid solutions and their photoluminescence properties**, Naveen Kumar, Krishan Chander Singh, Hariom, Jitender, **Research and Reviews in electrochemistry**, 4(4), 2013 ,117-120 ISSN : 0974 – 7540
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105. **Excess Molar Enthalpies of mixing of sec- or tert- butyl chloride with aromatic hydrocarbons at temperature 308.15 K**, Naveen Verma, Hari Om, Krishan Chander Singh, **Journal of Chemical, Biological and Physical science**, Sec A, 2012, Vol.2, No. 4, 1736-46, E-ISSN: 2249-1929  
**Impact factor: 2.307**
106. **Volumetric properties of sec- and tert-butyl chloride with benzene, toluene and xylenes at 308.15 K**. Naveen Verma, S. Maken, K.C. Singh, J.W. Park. **J. Molecular Liquids**. Volume 141, Issues 1-2, 30 May 2008, Pages 35-38, <https://doi.org/10.1016/j.molliq.2008.02.008> **Impact factor: 6.633**
107. **Excess Gibb's free energy of butyl acetate with cyclohexane and aromatic hydrocarbons at 308.15 K**. S. Maken, Naveen Verma, Ankur Gaur, K.C. Singh, and J.W. Park. **Korean J. Chemical Engineering**. 25(2) 273-278(2008), <https://doi.org/10.1007/s11814-008-0048-8> **Impact factor: 3.309**
108. **Molar Excess Volume of sec- and tert-Butyl Chloride with Aromatic Hydrocarbons at 298.15 K**. Naveen Verma, Sanjeev Maken, Balraj Deshwal, Krishan Chander Singh, Jin-Won Park, **J. Chem. Eng. Data**, 2007, 52, 2083-2085, <https://doi.org/10.1021/je7002918> **Impact factor: 3.199**
109. **Molar Excess Volume of Butyl Acetate with Cyclohexane or Aromatic Hydrocarbons at 298.15 K**, Sanjeev Maken , Ankur Gaur, Naveen Verma, K. C. Singh ,

**Book Chapters**

<b>Title with name of authors as appearing in publication</b>	<b>Book Title</b>	<b>Publishers</b>	<b>ISSN/ISBN</b>
<b>Advanced Materials towards Environmental Protection</b> , Naveen Kumar, Peter R Makgwane, Jitender Jindal	<b>Advanced Materials for a Sustainable Environment Development Strategies and Applications</b> , Editors: Naveen Kumar, Peter R	CRC Press, Taylor & Francis	9.78103E+12
<b>Metal oxide-assisted heterostructures: At a glance</b> , Naveen Kumar, Anuj Mittal, Anuradha Sharma	<b>Metal Oxide-Based Heterostructures Fabrication and Applications</b> , Editors: Naveen Kumar, Bernabe Mari Soucase	Elsevier	9.78032E+12
<b>Nano sensor for crop protection</b> Monika Kamari, Naveen Kumar, David E. Motaung, Nouredine Issaoui, Suresh Kumar, Gita Rani	NANOPARTICLES SYNTHESIS, CHARACTERIZATION AND APPLICATION, Nar Singh Chauhan Sarvajeet Singh Gill	Elsevier	978-0-323-91703-2
<b>Nanoparticle synthesis, characterization and applications</b> Shruti Jain, Naveen Kumar, Muhammad Tahir, Sapana Garg	NANOPARTICLES SYNTHESIS, CHARACTERIZATION AND APPLICATION, Nar Singh Chauhan Sarvajeet Singh Gill	Elsevier	978-0-323-91703-2
<b>Biofuels Additives Blending</b> , Peter R. Makgwane, Naveen Kumar, David E. Motaung	<b>Nanotechnology for Advanced Biofuels: Fundamentals and Applications</b> , Editors :Ashok Kumar, Tuan Anh Nguyen Swati Sharma, Muhammad Bilal Ram Gupta	Elsevier	978-0-323-91759-9
<b>Photocatalysis by zinc oxide-based nanomaterials</b> , Naveen Kumar, Suprabha Yadav, Anuj Mittal, Kavitha Kumari	<b>Nanostructured Zinc Oxide</b> , Kamlendra Awasthi, Chapter-15, 2021, 393-457	Elsevier	9.78013E+12

<b>Anodic oxide nanostructures: Theories of anodic nanostructure self-organization,</b> Naveen Verma, Jitender Jindal, Krishan Chander Singh, Anuj Mittal, Advanced Coating Materials	<b>Advanced Coating Materials,</b> Chapter 8, Book Editor(s):Liang Li,Qing Yang	WILEY-Scrivener Publisher	1119407567
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(Annexure C)

### Conference Attended

Sr. No.	Title of the paper presented	Presented by	Title of the conference/ seminar etc & organizer	Date of the event
1	Excess Gibb's free energy of butyl acetate with cyclohexane and aromatic hydrocarbons at 308.15 K	Naveen Verma	95th Indian Science congress held at Visakhapatnam	03-07 Jan, 2008
2	Volumetric properties of <i>sec</i> - and <i>tert</i> -butyl chloride with benzene, toluene and xylenes at 308.15"	Naveen Verma	95th Indian Science congress held at Visakhapatnam	03-07 Jan, 2008
3	Study of Thermodynamic molecular interactions in liquid mixtures containing isomeric chlorobutanes + cyclohexane or benzene or toluene mixtures at temperature 303.15 K	Naveen Verma	National conference on Global Challenges New Frontier in Chemical Sciences, Kurukshetra University Kurukshetra, Haryana	22-23 Sep, 2012
4	Excess molar enthalpies and isothermal (vapour liquid ) equilibria of sec butyl chloride + cyclohexane or benzene or toluene mixtures.	Naveen Verma	International conference on Green Technologies For Environmental Rehabilitation, Gurukul Kangri, Haridwar, Uttarakhand	11-13 Feb, 2012
5	Porous anodic alumina film formation in oxalic & phosphoric acid solutions and photoluminescence properties	Naveen Verma	National conference on Advances In Chemical Sciences, Maharshi Dayanand University, Rohtak.	1-2 March, 2013
6	Structural Studies Of Porous Anodic Alumina Formed In Phosphoric Acid By Two Step Anodic Oxidation And Influence Of Applied Voltage For Fabrication Of Ordered Porous Structure.	Naveen Verma	International conference on Interdisciplinary Areas With Chemical Sciences, Punjab university, Chandigarh	30 Oct- 1 Nov. 2013

7	Improved porous structure of anodic alumina formed in Phosphoric acid by two step anodic oxidation	Naveen Verma	National Conference on Emerging Trends in Engineering & Sciences. Gurukul Kangri, Haridwar, Uttarakhand	9-10 Nov. 2013
8	Influence of anodization parameters of first step on structural features of porous anodic alumina (PAA) finally formed in phosphoric acid	Naveen Verma	101 <sup>st</sup> Indian Science Congress Association, University of Jammu, Jammu	3-7 Feb. 2014
9.	Surface and Electrochemical Impedence characteristics of Anodic Oxide Film on Ta and Nb in Different aqueous electrolyte	Naveen Verma	101 <sup>st</sup> Indian Science Congress Association, University of Mumbai, Mumbai	3-7 Jan 2015
10	Anodic oxide film on aluminium in H <sub>3</sub> PO <sub>4</sub> + KMnO <sub>4</sub> electrolyte mixture at different anodization conditions	Naveen Verma	National conference on Emerging Trends in Chemical Sciences and Technlogy(ETCST-15) CDLU -Sirsa	Feb 25, 2015
11	Luminescent Properties of CaAl <sub>2</sub> O <sub>4</sub> :Eu <sup>3+</sup> .,Gd <sup>3+</sup> phosphor synthesized by combustion synthesis method.	Naveen Verma	National conference on Science and technology for Indegenious development on India ISCA-Haridwar Chapter Gurukul Kangri University, haridwar, Utrakhand	Sept. 28-30. 2015
12	Spectral properties of the Eu <sup>2+</sup> /Eu <sup>3+</sup> activated Barium aluminate phosphors with varies Gd <sup>3+</sup> concentration by combustion method	Naveen Verma	International conference on Nascent development on chemical sciences BITS-PILANI	October 16-18, 2015
13	Enhanced Luminescence by Tunable Coupling of Eu <sup>3+</sup> and Tb <sup>3+</sup> in ZnAl <sub>2</sub> O <sub>4</sub> :Eu <sup>3+</sup> :Tb <sup>3+</sup> phosphor synthesized by solution combustion method	Naveen Verma	National Conference on science and Technology for national Development Gurukul Kangri University, haridwar, Utrakhand	November 20-22, 2016
14	Synthesis, characterization and Photocatalytic activity of visible active ternary TiO <sub>2</sub> /CdS/ZnS nano-composites.	Naveen Kumar	NCSTSD, Department of Chemistry, M D University, Rohtak	Feb12-2019 2019
15	Hydrothermally synthesized binary TiO <sub>2</sub> /SnS composite for photocatalytic activity	Naveen Kumar	NCSTRD, Department of Chemistry, M D University, Rohtak	Oct 14-15 2019
16	Novel mixed metal oxide (ZnO.La2O3.CeO2) synthesized via hydrothermal and solution combustion process -A comparative study and their photocatalytic properties.	Naveen Kumar	1 <sup>st</sup> International conference on Manufacturing, Material Science & Engineering Hyderabad, India-501401	August 16-17, 2019
17	TiO <sub>2</sub> /Bi2O3/CuO nanocomposites for environmental protection: Synthesis, characterization and removal of Triclopyr pesticide	Naveen Kumar	Department of Chemical Engineering, Veer Surendra Sai University of Technology, Burla, Odisha 25-26th March 2023	25-26th March 2023

### Invited Lectures delivered outside Institute

- (i) Lecture delivered in Conference Title: Green Technologies: Issues and Challenges on Topic **“Visible Active Photocatalysts for environmental remediation”**
- (ii) Lecture delivered on in S G T University, Gurgaon on the topic **“ZnO as an efficient catalyst”**
- (iii) Lecture delivered in CRS University, Jind, Haryana, India **“Laboratory Experimental Instruction”**
- (iv) Lecture delivered in AIJHM College Rohtak, Haryana, India **“Raman Spectroscopy and its applications”**
- (v) Lecture delivered on **“Nanocomposite materials for adsorptive and photocatalytic decontamination of water pollutants”** 13th Conference of Haridwar (March 19, 2023) Chapter Of The Indian Science Congress Association on Science & Technology for all
- (vi) Lecture delivered on **“Visible active photocatalysts for environmental remediation Green technology: issues and challenges”** during September 22-24. 2022, Department of Chemistry, CCS University, Meerut