

## Curriculum Vitae



1. Name **Dr. Naveen Kumar**
2. Designation: Assistant Professor
3. Office Address: Department of Chemistry  
M. D. University, Rohtak-124001, India
- Office Phone: +91-1262393131
4. Residential Address: House No 40, Type III, M D University Campus
- Residential Phone: +91-9996415102( Mob)
5. Email: naveenkumar.chem@mdurohtak.ac.in  
vermanaveen17@gmail.com
  
6. Date of Birth: 17-10-1980
7. Date of Joining M.D.U 01-05-2010
8. Field of Specialization: Physical Chemistry
9. Teaching Experience: 10 Years  
Research Experience 14 Years
10. Field of Research **Phosphor Materials, Photocatalysis, Composite materials, Solution Thermodynamics, Anodic oxide film on metals**  
Interest/ Area of Interest
  
11. Profile Enthusiastic, responsible, able to work independently using initiative, and as part of a team with a positive attitude. Proficient in teaching with innovative ideas.

### 12. Technical skills

Experience in handling Differential scanning calorimeter, Spectro Photometer, Ultrasonic Interferometer; Spectrophotometry (UV-VIS); Potentiometry; Polarimetry and Flame Photometry etc.

### 13. Academic Awards/Achievements

Qualified GATE (Graduate Aptitude Test in Engineering) in 2004.

Qualified UGC-JRF NET for fellowship and lectureship in June 2004.

### 14. Educational qualifications

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

### 15. Academic Societies Membership

Life Member Indian Science Congress Association, Kolkata.

Life Member Indian Chemical Society, Kolkata.

Life Member Indian Thermodynamic society

### 16. Career profile

Designation	Institute served	Duration	
		From	To
Lecturer (Assistant Professor)	Haryana Institute Of Technology, Asoda Haryana	July 2008	December 2008
Assistant Professor	Department of Chemistry, M.D. University, Rohtak	May, 2010	Till now

### 17. Project undertaken

Title of the project	Duration	Funding agency	Status
Anodic Oxide Films on Metals and Alloys	2011-2014	UGC, New Delhi	Completed
Photocatalytic Activity of ZnO composite on degradation of	2017	DSW, M D U Rohtak	Completed

synthetic dye			
Hybrid TiO <sub>2</sub> based Nanostructures: Synthesis, Characterization and their Photo catalytic activity	2018	DSW, M D U Rohtak	Completed
ZnO based hybrid materials – Synthesis, Characterization and application for degradation of pesticides	2019	DSW, M D U Rohtak	Ongoing

### 18. Publications

Research articles in published **33(Published) + 4(Communicated) (Annexure-I A)**

**19. Participation in conferences/seminars 13 (Annexure I B)**

**20. Research Guidance:** Ph. D: Awarded 1, Guiding: 4

**21. Research Assignment outside M. D. University, Rohtak**

#### 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

#### National Visits:

Lecture delivered on dated 15-03-2016 in S G T University, Gurgaon on the topic “**ZnO as an efficient catalyst**”

#### Training Programmes

Training Programme	Organizing Institution	Date of event
Orientation Course	ACS B.P.S. Mahila Vishwavidyalya, Khanpur Kalan (Sonapat)	Dec.22, 2011 to Jan.20, 2012
Refresher course	ACS Jamia Melia Islamia, New Delhi	Nov. 18, 2013 to Dec. 07, 2013
Short Term Course(1 week)	G. J. U, Hisar	Nov. 25, 2016 to Nov. 29,2016
Refresher course	HRDC, B.P.S. Mahila Vishwavidyalya, Khanpur Kalan (Sonapat)	Nov. 15, 2017 to Dec. 06, 2017
Capacity Building Programme	Faculty development Center, M. D. University, Rohtak	March11-24, 2019

### List of Publication

1. A. Mittal, S.Sharma, T. Kumar, N. S. Chauhan, K. Kumari, S. Maken, **N. Kumar**, Surfactant assisted hydrothermally synthesized novel TiO<sub>2</sub>/SnS@Pd nano-composite: Structural, morphological and photocatalytic activity, *Journal of Materials Science: Materials in Electronics*, (Communicated) [I.F.-2.195]
2. V. Kumari, A. Mittal, **N. Kumar**, Hydrothermally synthesized nano-carrots ZnO with CeO<sub>2</sub> heterojunctions and their photocatalytic activity towards different organic pollutants, *Journal of Materials Science: Materials in Electronics*, (Communicated) [I.F.-2.195]
3. V. Kumari, N. Kumar, Heterogeneous ZnO/CuO hierarchical nanostructures for photoremoval of organic contaminant, *Advanced Powder Technology*, (Communicated) [I.F.-3.195]
4. Highly efficient, visible active TiO<sub>2</sub>/CdS/ZnS photocatalyst, study of activity in an ultra low energy consumption LED based photo reactor, Anuj Mittal, Shankar Sharma, Vijaya Kumari, Suprabha Yadav, Nar Singh Chauhan, **Naveen Kumar**, *Journal of Materials Science: Materials in Electronics*, 30(19), 17933–17946 (2019)
5. Near Ultraviolet excited down conversion Eu and Er co-doped CaAl<sub>2</sub>O<sub>4</sub> color tunable nano-phosphors: Structural, morphological and Photoluminescent Characteristics, **Naveen Kumar**, Bernabe Marí, Jitender Jindal, Anuj Mittal, Kavitha Kumari, Sanjeev Maken, *Materials Today: Proceedings* (Accepted)
6. Photocatalytic degradation of Triclopyr, a persistent pesticide by ZnO/SnO<sub>2</sub> nanocomposites, Suprabha Yadav, **Naveen Kumar**, Vijaya Kumari, Anuj Mittal, Shankar Sharma, *Materials Today: Proceedings* (Accepted)
7. Novel mixed metal oxide (ZnO.La<sub>2</sub>O<sub>3</sub>.CeO<sub>2</sub>) synthesized via hydrothermal and solution combustion process -A comparative study and their photocatalytic properties, Vijaya Kumari, **Naveen Kumar**, Suprabha Yadav, Anuj Mittal, Shankar Sharma, *Materials Today: Proceedings* (Accepted)
8. ZnO: C/N/S Semiconductor Photocatalysts: A Review Vijaya Kumari , Anuj Mittal , Jitender Jindal , Suprabha Yadav , **Naveen Kumar**, *Frontiers of Material Science* **13** (2019) 1-22.
9. Curcumin Encapsulated PEGylated Nanoliposomes: A Potential Anti-Infective Therapeutic Agent, Anuj Mittal, **Naveen Kumar**, Nar Singh Chauhan, *Indian Journal of Microbiology*, **59** (2019) 336-343.
10. Non-metal modified TiO<sub>2</sub>: a step towards visible light photocatalysis, Anuj Mittal, Bernabe Mari, Shankar Sharma, Vijaya Kumari, Sanjeev Maken, Kavitha Kumari,

**Naveen Kumar**, *Journal of Materials Science: Materials in Electronics*, 30,(4), 3186–3207 (2019)

11. Excess molar volume and excess molar enthalpy of n-, sec- and tert-butyl chloride with cyclohexane at 298.15 K in terms of Prigogine-Flory-Patterson theory" *Journal of molecular liquids* (Accepted)
12. Anodic oxide nanostructures: Theories of anodic nanostructure self-organization, **Naveen Verma**, Jitender Jindal, Krishan Chander Singh, Anuj Mittal, *Advanced Coating Materials*, WILEY-Scrivener Publisher, USA (Book Chapter Accepted).
13. Synthesis and characterization of coupled ZnO/SnO<sub>2</sub> photocatalysts and their activity towards degradation of cibacron red dye, **Naveen Verma**, Suprabha Yadav, Bernabe Mari, Anuj Mittal, Jitender Jindal, *Trans. Ind. Ceram. Soc.* 77 1-7 (2018).
14. TiO<sub>2</sub> and its composites as promising biomaterials: a review, **Naveen Kumar**, Nar Singh Chauhan, Anuj Mittal, Shankar Sharma, *Biometals*. 31(2) 147-159 (2018)
15. Low temperature synthesized biphasic ZnO/Al<sub>2</sub>O<sub>3</sub> nanocomposites for photocatalytic and antimicrobial applications, **Naveen Kumar**, Suprabha Yadav, Nar Singh Chauhan, Anuj Mittal, Vijaya Kumari, *Semiconductor Science and Technology* (Communicated)
16. 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**, Bernabe Mari, Krishan Chander Singh, Jitender Jindal, Suprabha Yadav, Anuj Mittal, *Journal of Australian Ceramic Society*, 55, 2019, 179-185.
17. Luminescence Properties of CaAl<sub>2</sub>O<sub>4</sub>:Eu<sup>3+</sup>, Gd<sup>3+</sup> Phosphors Synthesized by Combustion Synthesis Method, **Naveen Verma**, K.C. Singh , B. Mari , M. Mollar , J. Jindal, *Acta Physica Polonica*, 132(4), 2017, 1261-1264.
18. Steady state kinetics of formation of oxide films on niobium and tantalum metals in malic acid electrolyte at different temperatures, **Naveen Verma**, Jitender Jindal, Krishan Chander Singh, *Journal of Indian Chemical Society*, 94, 2017, 409-417.
19. Optical properties of Yb-doped ZnO/MgO composites, Bernabe Mari Soucase, K.C. Singh, **Naveen Verma**, Jitender Jindal, *Ceramic International* , 42(11), 2016, 13018-13023.
20. Structural and electrochemical impedance spectroscopic studies of anodic oxide film on zirconium fabricated in different aqueous electrolyte, **Naveen Verma**, Krishan Chander Singh, Jitender Jindal, Bernabe Mari and Miguel Mollar, *Journal of Australian Ceramic Society* 52(2) 2016, 111-119
21. Structural and optical properties of Ta<sub>2</sub>O<sub>5</sub>:Eu<sup>3+</sup>: Mg<sup>2+</sup> or Ca<sup>2+</sup> phosphor prepared by molten salt method, **Naveen Verma**, Bernabe Mari, Krishan Chander Singh, Jitender Jindal, Miguel Mollar, Ravi Rana, A. L. J. Pereira , F. J. Manjón, *AIP Conference Proceedings* 1724, 020082 (2016); doi: 10.1063/1.4945202.

22. Luminescence properties of  $\text{ZnMoO}_4:\text{Eu}^{3+}:\text{Y}^{3+}$  materials synthesized by solution combustion synthesis method, **Naveen Verma**, Bernabe Mari, Krishan Chander Singh, Jitender Jindal, Miguel Mollar, and Suprabha Yadav, AIP Conference Proceedings **1724**, 020122 (2016); doi: 10.1063/1.4945242.
23. Synthesis and characterization of nanoporous anodic oxide film on aluminum in  $\text{H}_3\text{PO}_4 + \text{KMnO}_4$  electrolyte mixture at different anodization conditions, **Naveen Verma**, Jitender Jindal, Krishan Chander Singh, and Bernabe Mari, AIP Conference Proceedings **1724**, 020044 (2016); doi: 10.1063/1.4945164
24. Anodic Oxide Films on Niobium and Tantalum in Different Aqueous Electrolytes and Their Impedance Characteristics, **Naveen Verma**, K.C. Singh, B. Marí, M. Mollar, J. Jindal, Acta Physica Polonica A, 129(3) 297-303(2016).
25. Luminescence Properties of the  $\text{Eu}^{2+}/\text{Eu}^{3+}$  Activated Barium Aluminate Phosphors with  $\text{Gd}^{3+}$  concentration Variation, B. Marí, K. C. Singh, **Naveen Verma**, M. Mollar & J. Jindal, Trans. Ind. Ceram. Soc., vol. 74(3) 3, 1-5 (2015).
26. Fabrication of Nanomaterials on Porous Anodic Alumina Template Using Various Techniques, **Naveen Verma**, Krishan Chander Singh, Jitender Jindal, Indian Journal of Advances in Chemical Science 3(3) (2015) 235-246
27. Influence of anodization parameters of first step on structural features of porous anodic alumina (PAA) finally formed in phosphoric acid, **Naveen Verma**, Krishan Chander Singh, Bernabe Mari, Jitender Jindal, Journal of Indian Chemical Society, 92, 2015, 1237-1243.
28. Ultrasonic studies of molecular interactions in binary mixtures of formamide with some isomers of butanol at 298.15 K and 308.15 K. Manju Rani, Suman Gahlyan, Hari Om, **Naveen Verma**, Sanjeev Maken, Journal of Molecular Liquids 194 (2014) 100–109. ISSN: 0167-7322.
29. Fabrication of Porous Anodic Alumina by Two Step Anodic Oxidation and Photo Luminescent Properties of doped and undoped Alumina, **Naveen Verma**, Krishan Chander Singh, Bernabe Mari, Hari Om, Jitender Jindal, Chem Sci Rev Lett **2014**, 3(11), 597-602, ISSN 2278-6783.
30. Fabrication and Structural Studies of Porous Anodic Oxide Film on Pure Aluminium and Aluminium Alloy (AA 1100), **Naveen Verma**, Krishan Chander Singh, Bernabe Mari and Jitender, Chemical Science Transactions **2014**, 3(2), 556-561, ISSN: 2278-3318.
31. 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
32. High field ionic conduction in anodic oxide films on tantalum in aqueous electrolytes, Hariom, **Naveen Verma**, Krishan Chander Singh, European Journal of Applied Engineering and Scientific Research, **2013**, 2 (1):25-35., ISSN: 2278 – 0041.
33. 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.

- 34.** 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.
- 35.** 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).
- 36.** 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.
- 37.** Molar Excess Volume of Butyl Acetate with Cyclohexane or Aromatic Hydrocarbons at 298.15 K, Sanjeev Maken , Ankur Gaur, **Naveen Verma**, K. C. Singh , Seungmoon Lee and Jin-Won Park J. Ind. Eng. Chem., Vol. 13, No. 7, (2007) 1098-1102.

**Conference Attended**

<b>Sr. No</b>	<b>Title of the paper presented</b>	<b>Presented by</b>	<b>Title of the conference/ seminar etc &amp; organizer</b>	<b>Date of the event</b>
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 Impedance 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 Technology(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, Uttrakhand	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, Uttrakhand	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.La <sub>2</sub> O <sub>3</sub> .CeO <sub>2</sub> ) synthesized via hydrothermal and solution combustion process -A comparative study and their photocatalytic properties.	Naveen Kumar	Ist International conference on Manufacturing, Material Science & Engineering Hyderabad, India- 501401	August 16-17, 2019