



<b>Name</b>	<b>Dr. Sanjay Kumar</b>
Designation	Assistant Professor
Department	Chemistry
Qualifications	M.Sc. (GNDU Amritsar) Ph.D. (Panjab university Chandigarh) CSIR UGC-JRF DST-DAAD Fellow (TU Berlin, Germany)
Teaching Experience	12 Years
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**Membership of professional bodies:**

- *Life Member* of Chemical Research Society of India
- *Life Member* of Him Science Congress Association

**Research Area:** Synthesis and application of Nanoparticles (Nanochemistry)

**List of International Publications**

- 1) Exploring the surfactant structure efficacy in controlling growth and stability of HgS nanoparticles in aqueous medium; *Chemical Physics Impact* 4, 100070

- 2) Recent advances in nanocellulose processing, functionalization and applications: a review *Materials Advances* (2021) 2, 1872
- 3) The critical role of surfactants towards CdS nanoparticles: Synthesis, stability, optical and PL emission properties, *RSC Adv.* 3 (2013) 2662-2676.
- 4) A Mechanistic Study of Photoluminescence Quenching of Cetyl Trimethyl Ammonium Bromide Stabilized ZnS Nanoparticles with  $\beta$ -Cyclodextrin, *J. Nanosci. Nanotechnol.* 12, (2012) 1760-1764
- 5) Photoactivation and perturbation of photoluminescent properties of aqueous ZnS nanoparticles: Probing the surfactant-semiconductor interfaces, *Mater. Chem. Phys.* 131 (2011) 94-101
- 6) Mechanistic study of surface functionalization and structural stabilization of silver nanoparticles by Cetylpyridinium chloride; *Sci. Adv. Mater.* 3 (2011) 1-14.
- 7) Growth, stability, optical and photoluminescent properties of aqueous colloidal ZnS Nanoparticles in relation to surfactant molecular structure; *J. Colloid Interface Sci.* 360 (2011), 497-507
- 8) Influence of surfactant structures in luminescence enhancement dynamics during nucleation and growth of aqueous ZnS nanoparticles and their photoactivation due to illumination with UV/visible light; *J. Lumin.* 130 (2010) 2377–2384
- 9) Facile synthesis, growth mechanism, and optical properties of CdSe nanoparticles in self-assembled micellar media and their efficient conjugation with proteins; *J. Nanopart. Res.* 12 (2010) 1697–1709
- 10) Nucleation and growth of surfactant passivated CdS and HgS Nanoparticles: Time dependent Absorption and Luminescence profiles, *Nanoscale*, 2 (2010) 145
- 11) Evolution of ZnS nanoparticles via facile CTAB aqueous micellar solution route: A study on controlling parameters; *Nanoscale Res. Lett.*, 14 (2009) 17-28
- 12) Effect of cationic surfactant head groups on synthesis, growth and agglomeration behaviour of ZnS nanoparticles; *Nanoscale Res. Lett.*, 4 (2009), 1197
- 13) Surfactant assisted synthesis and spectroscopic characterization of selenium nanoparticles in ambient conditions, *Nanotechnology* 19 (2008) 295601

### **BOOKS AND BOOK CHAPTERS**

- 1) Colloidal ZnS nanoparticles: Exploring the role of Surfactants; Lambert Academic Publishers *ISBN No. 978-620- 2006497-2 Year (2017)*

- 2) ZnS Nanoparticles in aqueous medium: Synthesis, properties and perspectives, *Encyclopedia of Semiconductor Nanotechnology*, 667 (2013)
- 3) Nucleation and growth of surfactant-passivated semiconducting nanoparticles: Time-dependent absorption and luminescence profiles; *Encyclopedia of Semiconductor Nanotechnology*, 2011, 6, 887-1072.

#### **PAPER PRESENTATIONS IN CONFERENCES/SYMPOSIA/ SEMINAR**

- 1) Indo-US workshop green Chemistry Engineering and Technology Organised by Panjab University Chandigarh on July 11, 2019 Surfactant assisted green synthesis methods for stabilization of semiconductor nanoparticles,
- 2) Multidisciplinary international conference on natural resource management on socioeconomic development of western himalyas: opportunity and challenges on August 11, 2019 Title: Investigating the role of Surfactant in synthesis of HgS Nanoparticles,
- 3) Science education in H.P.: Analysis on changing scenario and revamping possibilities National conference of Higher education organised by IQAC Govt. College Hamirpur on March 27, 2019.
- 4) Investigating surfactants potential towards growth and stability of HgS nanoparticles in aqueous medium international conference on Science: Emerging scenario and future Challenges 11/6/2016
- 5) 13<sup>th</sup> Punjab Science Congress, Panjab University, Chandigarh, 7-9 February, 2010. Title: Dramatic Photoluminescence enhancement and Perturbation of Photophysical properties of ZnS nanoparticles: Probing the Surfactant-Semiconductor Interfaces
- 6) National Conference on Nanomaterials; Synthesis and Applications, DAV College Jalandhar, 6-7 February 2009, Title: Evolution of ZnS nanoparticles via facile CTAB aqueous micellar solution route: a study on controlling parameters
- 7) National Conference on Nano: The Next Revolution, JC DAV College, Dasuya, 4-5 December 2008 Title: Role of cationic surfactants on synthesis, growth and agglomeration behaviour of ZnS nanoparticles

- 8) Presented a poster in International Conference on Innovations in Chemistry for Sustainable Development' organized by Department of Chemistry, Panjab University, Chandigarh on 01-03 December, 2011.
- 9) Presented a poster in Professor Ram Chand Paul International Conference on 'Emerging trends in Chemistry' organized by Department of Chemistry, Panjab University, Chandigarh on 11-12 February, 2011.
- 10) Presented a poster in 3<sup>rd</sup> Chandigarh Science Congress held at Panjab University, Chandigarh on 26-28 February, 2009.
- 11) Presented Poster in 2<sup>nd</sup> Chandigarh Science Congress held on March 14-15, 2008 at Panjab University Chandigarh.
- 12) Presented Poster in Professor Ram Chand Paul IV<sup>th</sup> National Annual Symposium on Recent Trends in Chemistry held on Feb 19-20, 2008 at Panjab University Chandigarh.
- 13) Presented poster in 1<sup>st</sup> Chandigarh Science Congress held on March 10-11, 2007 at Panjab University Chandigarh.
- 14) Presented poster in international conference on Structure and Dynamics: From Micro to Macro held at University of Kolkata on 14-16 December 2006
- 15) Presented poster in Professor Ram Chand Paul III<sup>rd</sup> National Annual Symposium on Recent Trends in Chemistry organized on March 1-2, 2007 at Panjab University, Chandigarh.
- 16) Presented a poster in 19<sup>th</sup> National Annual Symposium and Professor Ram Chand Paul 2<sup>nd</sup> Symposium on Recent Trends in Chemistry on December 22-23, 2005 at Panjab University, Chandigarh.
- 17) Participated in 3<sup>rd</sup> mid-year symposium of the Chemical Research Society of India held on 26-27 July 2008 at National Institute of Education and Research, S.A.S Nagar, Punjab.
- 18) Participated in Interactive Meet with European and Indian Science Icon, hosted by Department of Science & Technology, Embassy of Germany, New Delhi, held on February 8, 2007 at Vigyan Bhavan, New Delhi.
- 19) Participated in National Seminar on Theoretical and Experimental Techniques in Nanoscience and Nanotechnology on March 29-30, 2007 at Panjab University, Chandigarh.
- 20) Participated in 9<sup>th</sup> National Symposium in Chemistry organized by Chemical Research Society of India from 1-4 February, 2007 at Delhi University.



## Dr. Sanjay Kumar

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nanotechnology

	All	Since 2017
Citations	507	249
h-index	9	7
i10-index	9	7

TITLE	CITED BY	YEAR
<a href="#">Evolution of ZnS nanoparticles via facile CTAB aqueous micellar solution route: a study on controlling parameters</a> SK Mehta, S Kumar, S Chaudhary, KK Bhasin, M Gradzielski Nanoscale research letters 4 (1), 17-28	124	2009
<a href="#">Effect of cationic surfactant head groups on synthesis, growth and agglomeration behavior of ZnS nanoparticles</a> SK Mehta, S Kumar, S Chaudhary, KK Bhasin Nanoscale research letters 4 (10), 1197-1208	93	2009
<a href="#">Growth, stability, optical and photoluminescent properties of aqueous colloidal ZnS nanoparticles in relation to surfactant molecular structure</a> SK Mehta, S Kumar, M Gradzielski Journal of colloid and interface science 360 (2), 497-507	80	2011
<a href="#">Nucleation and growth of surfactant-passivated CdS and HgS nanoparticles: time-dependent absorption and luminescence profiles</a> SK Mehta, S Kumar, S Chaudhary, KK Bhasin Nanoscale 2 (1), 145-152	45	2010
<a href="#">The critical role of surfactants towards CdS nanoparticles: synthesis, stability, optical and PL emission properties</a> S Kumar, M Gradzielski, SK Mehta RSC advances 3 (8), 2662-2676	40	2013
<a href="#">Recent advances in nanocellulose processing, functionalization and applications: A review</a> V Thakur, A Guleria, S Kumar, S Sharma, K Singh Materials Advances 2 (6), 1872-1895	39	2021
<a href="#">Surfactant assisted synthesis and spectroscopic characterization of selenium nanoparticles in ambient conditions</a> SK Mehta, S Chaudhary, S Kumar, KK Bhasin, K Torigoe, H Sakai, M Abe Nanotechnology 19 (29), 295601	37	2008

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<p><a href="#">Influence of surfactant structures in luminescence enhancement dynamics during nucleation and growth of aqueous ZnS nanoparticles and their photoactivation due to illumination ...</a></p> <p>SK Mehta, S Kumar Journal of luminescence 130 (12), 2377-2384</p>	17	2010
<p><a href="#">Facile synthesis, growth mechanism, and optical properties of CdSe nanoparticles in self-assembled micellar media and their efficient conjugation with proteins</a></p> <p>SK Mehta, S Chaudhary, S Kumar, S Singh Journal of Nanoparticle Research 12 (5), 1697-1709</p>	17	2010
<p><a href="#">Photoactivation and perturbation of photoluminescent properties of aqueous ZnS nanoparticles: Probing the surfactant-semiconductor interfaces</a></p> <p>SK Mehta, S Kumar Materials Chemistry and Physics 131 (1-2), 94-101</p>	7	2011
<p><a href="#">Mechanistic Study of Surface Functionalization and Structural Stabilization of Silver Nanoparticles by Cetylpyridinium Chloride</a></p> <p>SK Mehta, S Chaudhary, S Kumar, M Gradzielski Science of Advanced Materials 3 (2), 196-209</p>	6	2011
<p><a href="#">Exploring the surfactant structure efficacy in controlling growth and stability of HgS nanoparticles in aqueous medium</a></p> <p>S Kumar, SK Mehta, V Thakur, A Vashisht, K Singh Chemical Physics Impact 4, 100070</p>	1	2022
<p><a href="#">A Mechanistic Study of Photoluminescence Quenching of Cetyl Trimethyl Ammonium Bromide Stabilized ZnS Nanoparticles with <math>\beta</math>-Cyclodextrin</a></p> <p>SK Mehta, A Umar, S Kumar Journal of Nanoscience and Nanotechnology 12 (3), 1760-1764</p>	1	2012