

CURRICULUM VITAE

Dr. ANEETA KHARKWAL

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ACADEMIC QUALIFICATION

- **Ph. D, Chemistry, Indian Institute of Technology (IIT), New Delhi, India, with thesis title “Chalcopyrite and Hybrid Semiconductors Synthesized by Non-vacuum Based Methods”, 2014, 9.25 CGPA.**
- **Qualified CSIR–NET-JRF.**
- **M.Sc., Chemistry, Kumaun University, Nainital, Uttrakhand, India, 2003, First Division.**
- **B.Sc., Physics, Chemistry, Mathematics, Kumaun University, Nainital, Uttrakhand, India, 2001, First Division.**

TEACHING/ RESEARCH EXPERIENCE:

- Assistant Professor (Adhoc), **Deen Dayal Upadhyaya College, University of Delhi** (July 2019 - January 2020).
- Postdoctoral Fellow, **Department of Chemistry, University of Delhi, India** (March 2017-March 2019).
- Assistant Professor (Adhoc), **Bhaskaracharya College of Applied Sciences, University of Delhi** (January 2015 - May 2015).
- Assistant Professor (guest), **Dayal Singh College, University of Delhi** (August 2016-November 2016, January 2017 - April 2017).
- Assistant Professor (guest), **Shaheed Bhagat Singh College, University of Delhi** (January 2014- April 2014, August 2014- November 2014, January 2016- April 2016, August 2016- November 2016 , January 2017 to April 2017, August 2017- November 2017 , January 2018 to April 2018).

- CSIR-Senior Research Fellow, **National Physical Laboratory**, New Delhi, India (July 2011-January 2014).
- CSIR- Junior Research Fellow, **National Physical Laboratory**, New Delhi, India (July 2009-June 2011).

AWARDS AND ACHIEVEMENTS:

- Awarded **Junior Research Fellowship** by CSIR w. e. f. 1st July, 2009 (Certificate No. 20-6/2008(ii) EU-IV).
- Awarded **Senior Research Fellowship** by CSIR w. e. f. 1st July, 2011 (Certificate No. 20-6/2008(ii) EU-IV).
- Awarded **National Post Doctoral Fellowship (N-PDF)** by SERB, w. e. f. 22 March 2017 (File No. PDF/2016/001616)

PUBLICATIONS

1. S.B. Tyagi, **A. Kharkwal**, Nitu, Mamta Kharkwal, Raghunandan Sharma “Synthesis and Characterization of Layered Double Hydroxides Containing Optically Active Transition Metal Ion” **Solid State Sciences** 63 (2017) 93-102 ISSN: 1293-2558
2. **A. Kharkwal**, Nitu, K. Jain, S. B. Tyagi, M. Kharkwal “Novel synthesis of selective phase-shape orientation of AgInS₂ nanoparticles at low temperature” **Colloid and Polymer Science**, Accepted: 16 March 2015, DOI 10.1007/s00396-015-3574-z 5 ISSN: 0303-402X 7(293), p. 1953-1959
3. **A. Kharkwal**, K. Jain, S.B. Tyagi, A.K. Singh, S. N. Sharma, M. Kharkwal” One-Pot Synthesis of CuInS₂ and CuInS₂/MS (M=Cd, Zn) Core-shell Luminescent Nanocrystals: A Low-Temperature and Low-Cost Approach” **Colloid and Polymer Science** DOI: 10.1007/s00396-014-3326-5
4. D. Verma, **A. Kharkwal**, S.N. Singh, P.K. Singh, S.N. Sharma, S.S. Mehdi, M. Husain “Application of ZnO nanoparticles to enhance photoluminescence in porous silicon and its possible utilization for improving the short wavelength quantum efficiency of silicon solar cell” **Solid State Sciences** 37 (2014) 13-17 ISSN: 1293-2558

5. P. Chawla, A.K. Srivastava, **A. Kharkwal**, A.K. Singh, S. N. Sharma, "Study of Variation of Zn:Sn in Organically Synthesized Chalcopyrites of CZTSe" 28th European Photovoltaic Solar Energy Conference and Exhibition. 2470-2474. (2014).
6. **A. Kharkwal**, S. N. Sharma, K. Jain, A.K. Singh "A solvothermal approach for the size-, shape- and phase-controlled synthesis and properties of CuInS₂" **Materials Chemistry and Physics** vol. 144 issue 3 April 15, 2014. p. 252-262, DOI: 10.1016/j.matchemphys.2013.12.023. ISSN: 0254-0584
7. **A. Kharkwal**, S. N. Sharma, K. Jain, L. Arora, P. Chawla, A. K. Singh, S. Chand, "Polymeric stabilization of hybrid nanocomposites: a comparison between in situ and ex situ-grown CuInS₂ in poly(3-hexylthiophene) polymer" **Colloid and Polymer Science** vol. 291 issue 11 November 2013. p. 2607 – 2617, DOI: 10.1007/s00396-013-2967-0. ISSN: 0303-402X
8. D. Verma, S.N. Sharma, **A. Kharkwal**, G. Bhagavannarayana, M. Kumar, S.N. Singh, P.K. Singh, S.S. Mehdib, M. Husain, "Role of nanocrystalline ZnO coating on the stability of porous silicon formed on textured (100) Si" **Applied Surface Science** vol. 285 November 15, 2013. p. 564-571, DOI: 10.1016/j.apsusc.2013.08.094. ISSN: 0169-4332
9. **A. Kharkwal**, S. N. Sharma; S. Chand, A. K. Singh, "Hybrid organic (P3HT and MEH-PPV)-inorganic (CuInGaSe₂) nanocomposites: charge transfer and photostability studies" Proc. SPIE. 854916th International Workshop on Physics of Semiconductor Devices, 85493E. (October 15, 2012) doi: 10.1117/12.927367
10. **A. Kharkwal**, S. N. Sharma, S. Chand, A. K. Singh, "Effect of linker on the photosensitization of ZnO layers with CdSe quantum dots" **Colloid and Polymer Science** vol. 290 issue 1 January 2012. p. 49 – 61, DOI: 10.1007/s00396-011-2517-6. ISSN: 0303-402X
11. **A. Kharkwal**, M. Deepa, A. G. Joshi, A. K. Srivastava, "Red to Blue High Electrochromic Contrast and Rapid Switching Poly (3,4-ethylenedioxyppyrole)-Au/Ag Nanocomposite Devices for Smart Windows" **ChemPhysChem** vol. 12 issue 6 April 18, 2011. p. 1176-1188, DOI: 10.1002/cphc.201000973. ISSN: 1439-4235
12. M. Deepa, **A. Kharkwal**, A. G. Joshi, A. K. Srivastava, "Charge Transport and Electrochemical Response of Poly(3,4-ethylenedioxyppyrole) Films Improved by Noble-

Metal Nanoparticles” The **Journal of Physical Chemistry B** vol. 115 issue 22 June 09, 2011. p. 7321-7331, DOI: 10.1021/jp201055y. ISSN: 1520-6106

PAPERS PRESENTED IN CONFERENCES :

1. **A. Kharkwal**, Nitu, K. Jain, S. B. Tyagi, M. Kharkwal “One-pot synthesis of AgInS_2 and AgInS_2/MS (M=Cd, Zn) core-shell Luminescent nanocrystals” **Indo-Japan Symposium on Chemistry of Functional Molecules/ Materials (DU-JAIST-2016)** during 26th-27th February, 2016 (organized by Department of Chemistry, University of Delhi) **Poster Presentation.**
2. **A. Kharkwal**, S. B. Tyagi, K. Jain, J. Singh, M. Kharkwal “In situ-Synthesis of $\text{CuInS}_2/\text{CuIn}_x\text{Ga}_{1-x}\text{S}_2$ poly (3-hexylthiophene) organic-inorganic hybrid nanocomposites” **International Conference on Recent Advances in Nano Science and Technology (RAINSET-2015)** during 7th to 10th July, 2015, (Organized by Sathyabama university, Chennai) **Oral Presentation**
3. **A. Kharkwal**, S. B. Tyagi, K. Jain, M. Kharkwal. “Solvothermal Synthesis of Nanocrystalline $\text{CuInS}_2(\text{CIS})$, $\text{Cu}(\text{In}_x\text{Ga}_{1-x})\text{S}_2$ (CIGS) and CuInSe_2 (CISE): A phases controlled approach” **9th National Conference on Solid State Chemistry and Allied Areas (ISCAS-2015)**, during May 8th-10th, 2015 (Organized by Bhaskaracharya College of Applied Sciences, University of Delhi) **Poster Presentation**
4. **A. Kharkwal**, K. Jain, S. N. Sharma, N. Vijayan, S. Chand, A.K. Singh “Synthesis of luminescent CuInS_2 nanoparticles using single precursor source and their surface modification” **International Conference on Materials Science and Technology (ICMST 2012)** during 10th to 14th June 2012 (Organized by Department of Physics St. Thomas College Pala, Kottayam, Kerala, India) **Poster presentation. ,**
5. K. Jain, **A. Kharkwal**, Leena, S. N. Sharma, S. Chand “Synthesis of Highly Luminescent Ternary CuInS_2 Nanocrystals” **International Conference on Nanoscience and Technology (CONSAT-2012)** during January 20th-23rd, 2011 (Organized by ARCI, India, at Hyderabad) **Oral Presentation.**
6. **A. Kharakwal**, K. Jain, S. N. Sharma, N. Vijayan, S. Chand, A.K. Singh, “Effect of solvent on the properties and structure of CuInS_2 nanoparticles synthesized by solvothermal route” **International Conference on Nanoscience and Technology**

(ICONSAT–2012) during 20th–23rd, 2011 (Organized by ARCI, India, at Hyderabad)
Poster presentation.

7. **A. Kharkwal**, S. N. Sharma, S. Chand, A.K. Singh, “Hybrid Organic (P3HT & MEH-PPV)-Inorganic (CuInGaSe₂) Nanocomposites : Charge Transfer & Photostability Studies” **XVIth International Workshop On The Physics Of Semiconductor Devices (IWPSD-2011)** during 19th to 22nd December 2011, (Organized at IIT Kanpur) **Poster Presentation.**
8. S. N. Sharma, **A. Kharkwal**, A. Joshi, K. Jain “Effect of Linker on the Photosensitization of ZnO layers with CdSe Quantum Dots” **International materials research congress (IMRC-2010)** during 15th-19th August 2010 (Organized at Cancun, Mexico) **Poster Presentation**
9. **A. Kharkwal**, M. Deepa, A.K. Srivastava “Composite films of Poly (3,4-ethylenedioxyppyrole)-Au/Ag nanoparticles films: Enhanced electrochromic and redox activity” **Indo-Russian workshop on nanotechnology and laser induced plasma (IRNANO-2009)** during 24th-26th November, 2009 (Organized by Department of Physics, university of Delhi, at New Delhi) **Oral Presentation.**

CONFERENCE / WORKSHOP / ATTENDED

1. Participated in **Workshop on Material Characterization Techniques**, during 12th -16th July 2010 (organized by the national physical laboratory, New Delhi)
2. **3rd Asian Conference on Coordination Chemistry (ACCC-3, 2011)** during 17th-20th October 2011 (organized by IIT Kanpur and IIT Delhi).
3. International Conference on **Emerging Trends in Drugs Development and Natural – Products (ETDDNP-2018)**, during 12th -14th January 2018 (organized by University of Delhi).
4. **ACS on Campus event** at University of Delhi, 5th February 2018.

REFERENCES

(1) Prof. A.K. Singh

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Dated