Dr. SHAHAB AHMAD

Assistant Professor
Centre for Nanoscience and Nanotechnology,
Jamia Millia Islamia (Central University),
New Delhi-110 025, India.

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ACADEMICS

Ph.D. Physics (July 2010-2014): Department of Physics, Indian Institute of Technology Delhi, New Delhi-India (www.iitd.ac.in)

M.Tech. (Nanotechnology) (2008-2010): Department of Applied Physics, Aligarh Muslim University, Aligarh, UP, India (www.amu.ac.in)

M.Sc. (Physics) (2006-2008): Department of Physics, Aligarh Muslim University, India (www.amu.ac.in)

EXPERIENCE (After PhD Thesis Submission)

Assistant Professor (30th June 2017- Till present, *Permanent*)
Centre for Nanoscience and Nanotechnology, **Jamia Millia Islamia (Central University)**, New Delhi, India. (https://www.jmi.ac.in/cnn)

Research Associate (3rd Nov 2014- 30th June 2017) ~ 2 years and 8 months
Research Area: *Energy Storage and Optoelectronic Devices*
Supervisor: Dr. Michael De Volder, NanoManufacturing Lab, Institute for Manufacturing, Department of Engineering, **University of Cambridge**, UK. (www.nanomanufacturing.eng.cam.ac.uk)

Project Associate (19th Aug 2014-2nd Nov 2014) ~ 2.5 months
Supervisor: Prof. G. Vijaya Prakash, Nanophotonics Lab, Department of Physics, **Indian Institute of Technology Delhi**, New Delhi-India. (www.iitd.ac.in)

Visiting Scientist (18th May 2014-17th Aug 2014) ~ 3 months
Host: Prof. Jeremy J. Baumberg (FRS), Nanophotonics Centre, Cavendish Laboratory, Department of Physics, **University of Cambridge**, UK. (http://www.np.phy.cam.ac.uk/)

AWARDS AND ACHEIVEMENTS

1. **Distinction in Doctoral Research Award** from Indian Institute of Technology - Delhi (April 2016).
2. **Best Oral Presentation Award**, "International Winter School in Frontiers of Materials Science - 2018", JNCASR, Bangalore, India (3-7 Dec 2018).

3. Selected as a Physicist from the UK for participation in fully funded Newton-Bhabha (Indo-UK) Workshop on "**Translating Clean Energy Research to Rural India**", IISER Pune, India (04-08 Sep, 2017).
4. **Best Poster Presentation Award**, 7th UK - Japan Symposium on Fundamental Research Advances in Carbon Nanomaterials, **Royal Society of Chemistry, London, UK** (13 June 2016).
5. **Best Student Oral Presentation Award** for Young Scientists Forum in ICOOPMA 2014, **University of Leeds, UK** (27 July-1 Aug 2014).
6. **Best Poster Presentation Award** from SPIE in International Conference on Fiber Optics and Photonics-2012, IIT Madras, Chennai, India.
7. **Best Poster Presentation Award** in 2nd International conference on Advanced Nanomaterials and Nanotechnology, ICANN 2011, IIT Guwahati, India.
8. University 2nd Rank in M. Tech (Nanotechnology).

INTERNATIONAL VISITS FOR RESEARCH WORK

1. Visiting Research Fellow at NanoManufacturing Group, Institute for Manufacturing, Department of Engineering, University of Cambridge, UK with **Dr. Michael De Volder** for duration of ~ **1.5 months** (27 May- 07 July 2019).
2. Visiting Scientist at NanoPhotonics Centre, Cavendish Lab, University of Cambridge, UK with **Prof. Jeremy J. Baumberg (FRS)** for a duration of **3 months** after Ph.D thesis submission (May 2014- Aug 2014).
3. Research Student Visitor at NanoPhotonics Centre, Cavendish Lab, University of Cambridge, UK with **Prof. Jeremy J. Baumberg (FRS)** for a duration of **3 months** during Ph.D (May 2011- July 2011).

RESEAERCH GRANTS (After Joining JMI)

1- Funding Agency: **SERB**. Grant: **ECRA** (Early Career Research Award). Sanction Order No.: ECR/2018/002056. Date: 22.03.2019. **Amount: Rs 48,98,476/-. Principal Investigator: Dr. Shahab Ahmad**

2- Funding Agency: **DST**. Grant: **UK-IERI** Indo-UK Joint International Research Project. Sanction Order No.: DST/INT/UK/P-167/2017. Date: 03.10.2018. Amount: **Rs 27,65,140/- (India Side) and GBP: 20,086 (UK Side). Principal Investigators: Dr. Shahab Ahmad (India)** and Dr. Michael De Volder (UK).

3- Funding Agency: **UGC**. Grant: **Start-Up Research Grant**. Order No. F.30-422/2018 (BSR). Date: 29.06.2018. Amount: **Rs 10,00,000/-. Principal Investigator: Dr. Shahab Ahmad**.

4- Funding Agency: **DST**. Grant: Materials for Energy Storage (MES) – 2018. Approved (Estimated Cost: **Rs 95 Lacs INR**). **Principal Investigator: Dr. Shahab Ahmad.**

PATENTS

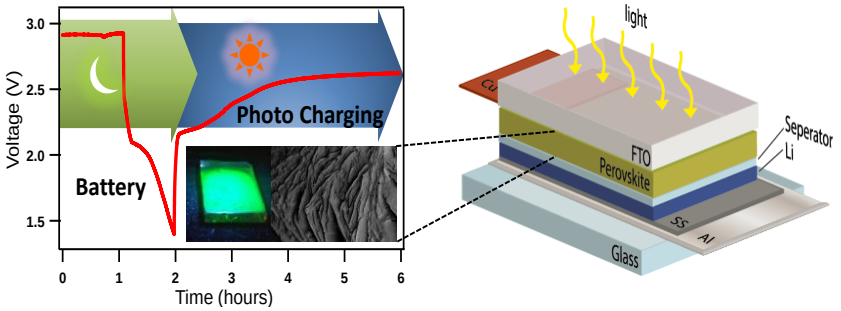
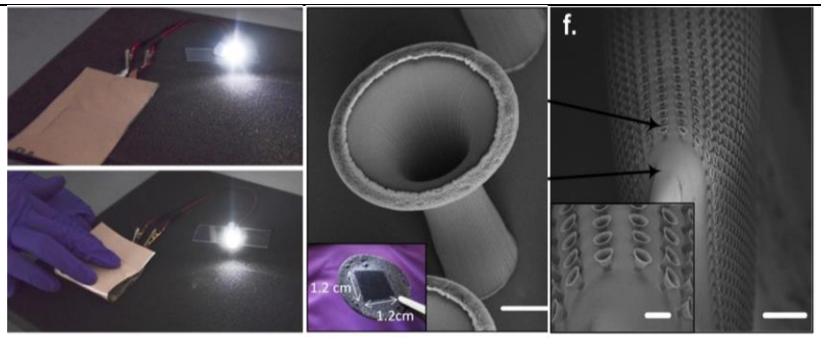
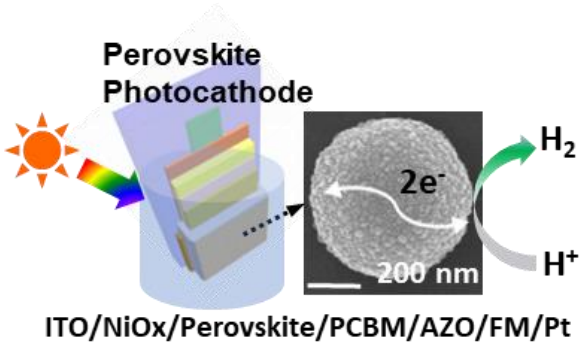
1. **(WO2018215470) "RECHARGEABLE ELECTROCHEMICAL CELLS, METHODS FOR THEIR MANUFACTURE AND OPERATION", UK Patent (Application number: GB1708175.3)**. Inventors: **Shahab Ahmad**, C. George, Jeremy J Baumberg, Michael De Volder. **Pub. No.** WO/2018/215470, **International Application No.:** PCT/EP2018/063392, **Publication Date:** 29.11.2018. https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2018215470&tab=PCTBIBLIO&maxRec=1000

INTERNATIONAL JOURNAL PUBLICATIONS (Selected Publications only)

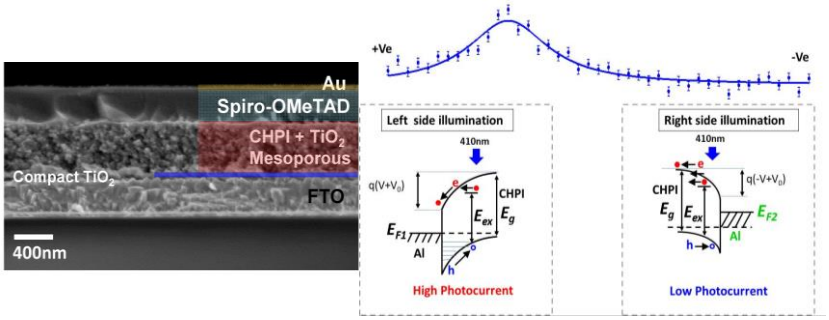
Total Publications: 35+

Total Impact Points: **160+**; Citations: **630+**.

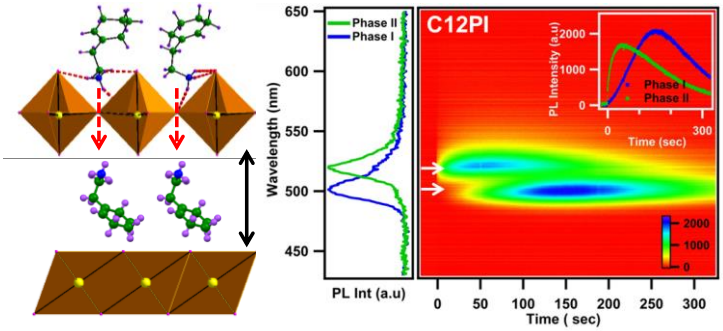
Google Scholar: https://scholar.google.co.uk/citations?user=c959JfwAAAAJ&hl=en

1. **Shahab Ahmad**, C. George, D. Beesley, Jeremy Baumberg and Michael De Volder, "Photo-Rechargeable Organo-Halide Perovskite Batteries", **Nano Letters** 18, (2018) 1856-1862. (***Impact Factor: 12.279***, link)	
2. **Shahab Ahmad**, Davor Copic, Chandramohan George and Michael De Volder, "Hierarchical Assemblies of Carbon Nanotubes for Ultraflexible Li-Ion Batteries", **Advanced Materials** 05 (2016). (***Impact Factor: 25.809***, link)	
3. **Shahab Ahmad**, Aditya Sadhanala, Robert LZ Hoye, Virgil Andrei, Mohammad Hadi Modarres, Baodan Zhao, Jan Rongé, Richard H Friend, Michael De Volder, "Triple Cation based Perovskite Photocathodes with AZO Protective Layer for Hydrogen Production Applications", **ACS Applied Materials & Interfaces** 11 (2019) 23198-23206. (***Impact Factor: 8.456,*** link)	

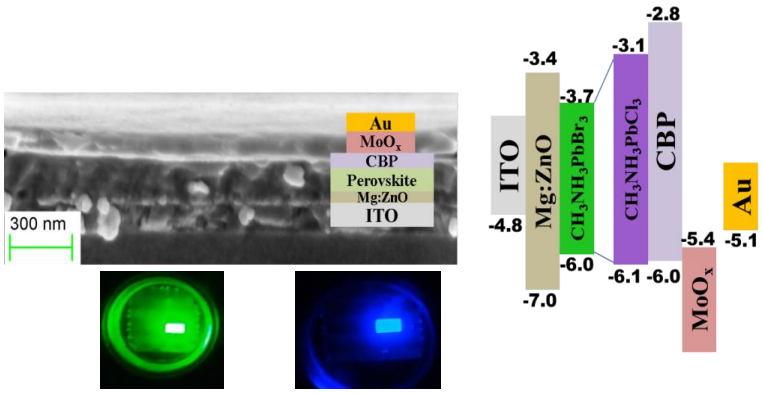
4. **Shahab Ahmad**, Pawan Kumar Kanaujia, Harry J Beeson, Antonio Abate, Felix Deschler, Dan Credgington, Ullrich Steiner, G Vijaya Prakash and Jeremy J Baumberg, "Strong photocurrent from 2D excitons in solution-processed stacked perovskite semiconductor sheets", **ACS Applied Materials & Interfaces** 7 (2015) 25227. (***Impact Factor: 8.456***, link)



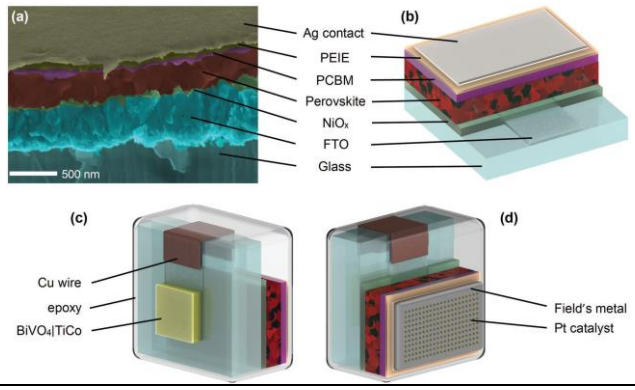
5. **Shahab Ahmad**, Pawan K. Kanaujia, Wendy Niu, Jeremy J. Baumberg and G. Vijaya Prakash, "In-situ intercalation dynamics in inorganic-organic layered perovskite thin films", **ACS Applied Materials and Interfaces** 6 (2014) 10238. (***Impact Factor: 8.456***, link: ***Selected as ACS Editors' Choice Article***)

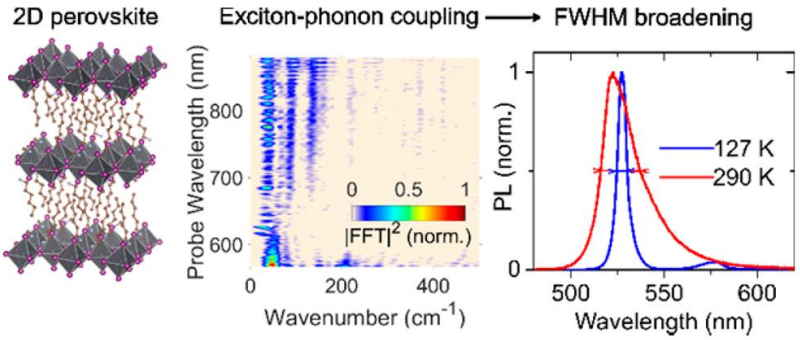
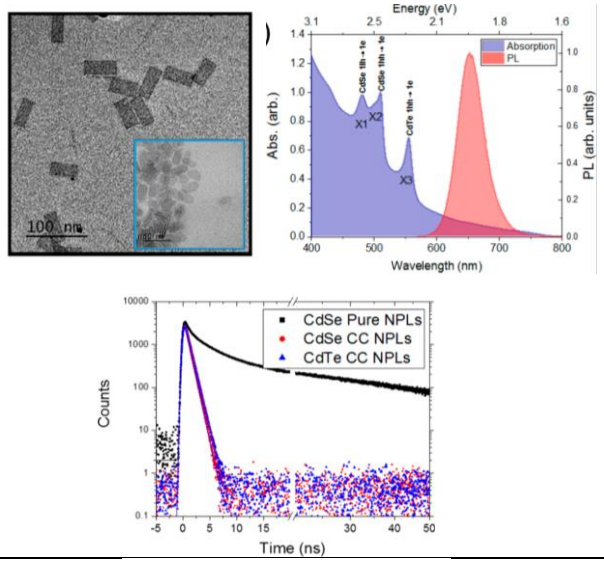
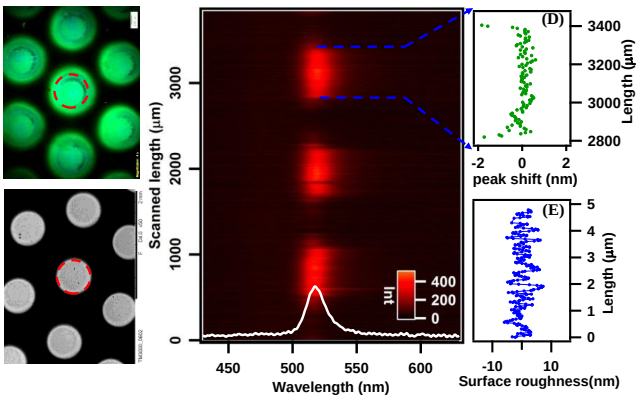
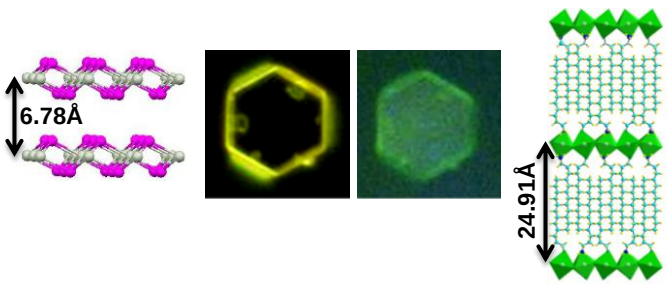


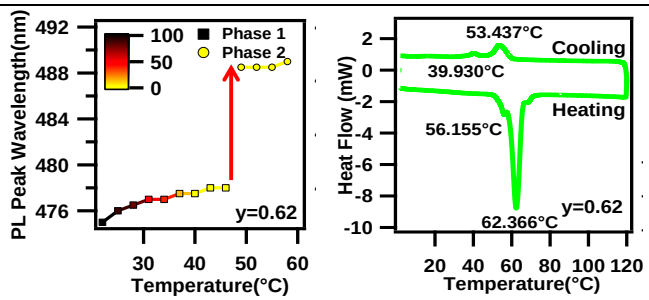
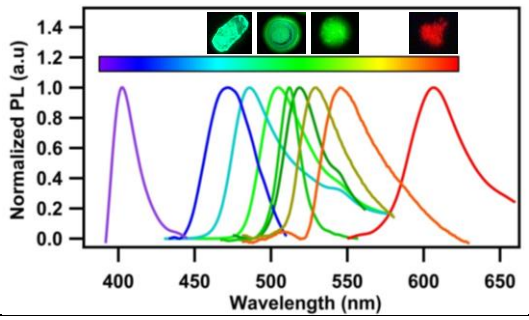
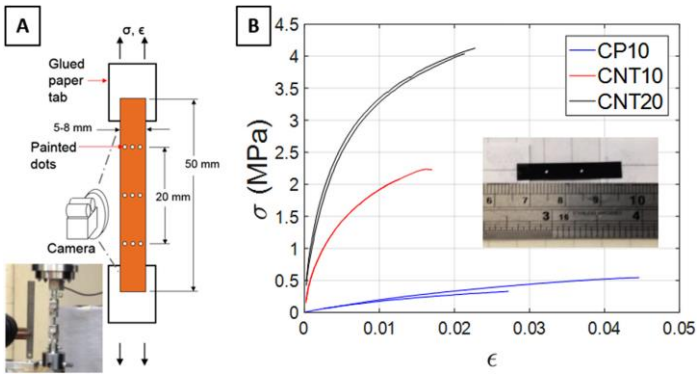
6. Aditya Sadhanala, **Shahab Ahmad**, Baodan Zhao, Siân E Dutton, Felix Deschler, Phoebe M. Pearce, Nadja Giesbrecht, Robert L. Z. Hoye, Karl C Goedel, Thomas Bein, Pablo Docampo, Michael F. L. De Volder and Richard H. Friend. "Blue-Green Colour Tunable Solution Processable Organolead Chloride-Bromide Mixed Halide Perovskites for Optoelectronic Applications", **Nano Letters** 15 (2015) 6095. (***Impact Factor: 12.279***, link



7. Virgil Andrei, Robert LZ Hoye, Micaela Crespo-Quesada, Mark Bajada, **Shahab Ahmad**, Michael De Volder, Richard Friend, Erwin Reisner, "Scalable Triple Cation Mixed Halide Perovskite-BiVO4 Tandems for Bias-Free Water Splitting", **Advanced Energy Materials** (2018) 1801403. (***Impact Factor: 24.884***, link)



8. Limeng Ni, Uyen Huynh, Alexandre Cheminal, Tudor H. Thomas, Ravichandran Shivanna, Ture F. Hinrichsen, **Shahab Ahmad**, Aditya Sadhanala and Akshay Rao, "Real-Time Observation of Exciton-Phonon Coupling Dynamics in Self-Assembled Hybrid Perovskite Quantum Wells", **ACS Nano** 11 (2017) 10834-10843. (***Impact Factor: 13.709***, link)	
9. Raj Pandya, Richard YS Chen, Alexandre Cheminal, Marion Dufour, Johannes M Richter, Tudor H Thomas, **Shahab Ahmad**, Aditya Sadhanala, Edward P Booker, Giorgio Divitini, Felix Deschler, Neil C Greenham, Sandrine Ithurria and Akshay Rao. "Exciton–Phonon Interactions Govern Charge-Transfer-State Dynamics in CdSe/CdTe Two-Dimensional Colloidal Heterostructures", **Journal of the American Chemical Society** 140 (2018) 14097-14111. (***Impact Factor: 14.695*** link)	
10. **Shahab Ahmad**, Chintam Hanmandlu, Pawan K. Kanaujia and G. Vijaya Prakash, "Direct deposition of highly ordered inorganic organic perovskite thin films: optimization and optoelectronic applications", **Optical Materials Express** 4 (2014) 1313. (***Impact Factor: 2.66***, link: One of the top Downloads of the Journal - July 2014).	
11. I. Saikumar, **Shahab Ahmad**, J. J. Baumberg and G. Vijaya Prakash, "Fabrication of excitonic luminescent Inorganic-Organic hybrid Nano and Microcrystals", **Scripta Materialia** 67 (2012) 834. (***Impact Factor: 3.747***, link)	

12. **Shahab Ahmad**, Jeremy J. Baumberg, and G. Vijaya Prakash, "Structural tunability and switchable exciton emission in inorganic-organic hybrids with mixed halides", **Journal of Applied Physics** 114 (2013) 233511. (***Impact Factor: 2.328***, link)	
13. **Shahab Ahmad** and G. Vijaya Prakash, " Strong room-temperature UV to red excitons from inorganic organic layered perovskites, $(R\text{-}NH_3)_2MX_4$ ($M=Pb^{2+}$, Sn^{2+}, Hg^{2+}; $X=I^-$, Br^-)", **Journal of Nanophotonics** 8 (2014) 083892. (***Impact Factor: 1.429***, link)	
14. Sarah Jessl, David Beesley, Simon Engelke, Christopher J. Valentine, Joe C. Stallar, Norman Fleck, **Shahab Ahmad**, Matthew T. Cole and Michael De Volder, "Carbon nanotube conductive additives for improved electrical and mechanical properties of flexible battery electrodes", **Materials Science & Engineering A** (2018) 735, 269-274. (***Impact Factor: 3.507***, link)	

CONFERENCES, WORKSHOPS, SYMPOSIUMS AND SUMMER SCHOOL

1. International **Winter School** in Frontiers of Materials Science -2018, JNCASR, Bangalore, India (*03-07 Dec 2018, Poster and Oral Presentation*).
2. Newton-Bhabha **(Indo-UK) Workshop** on "Translating Clean Energy Research to Rural India", IISER Pune, India. (*04-08 Sep, 2017*, *Discussion and Oral Presentation*)
3. **Materials Research Society (MRS)**, Spring Meeting, Phoenix, Arizona, USA. *(16-21 April, 2017, Poster presentation)*
4. 7th UK - Japan Symposium on Fundamental Research Advances in Carbon Nanomaterials, Royal Society of Chemistry (**RSC**), London, UK. (*13 June 2016, Poster presentation)*
5. **Winton Symposium** on "Solar Energies", Cavendish Laboratory, University of Cambridge, UK. (*03 Nov 2016*)
6. **Winton Symposium** on "Green Computing", Cavendish Laboratory, University of Cambridge, UK. (*28 Sep 2015*)
7. **ICOOPMA-2014** (Sixth International Conference on Optical, Optoelectronic and Photonic

Materials and Applications), University of Leeds, UK. *(27 July-1 Aug, 2014, Oral presentation)*

8. **IUMRS-ICA 2013**, Indian Institute of Science, Bangalore, India. *(16-20 Dec, 2013, Poster presentation)*
9. **Focused discussion meeting on Metamaterials and Photonic Nanostructures,** Indian Institute of Technology, Kanpur, India. *(16- 17 Aug, 2013, Poster presentation)*
10. **Third International Conference on Multifunctional, Hybrid and Nanomaterials,** Sorrento, Italy. *(3-7 March-2013, Oral presentation)*
11. **The International Conference on Fiber Optics and Photonics-2012**, IIT Madras, Chennai, India. *(9-12 Dec-2012, Poster presentation)*
12. **CFN-KIT Summer School on Nanophotonics 2012**, Bad Herrenalb, Karlsruhe, Germany. *(10-13 Sep-2012, Poster presentation)*
13. **16th International workshop on Physics of Semiconductor Devices, IWPSD 2011**, IIT Kanpur, India. *(19-22 Dec-2011, Poster presentation)*
14. **2nd International conference on Advanced Nanomaterials and Nanotechnology, ICANN 2011**, IIT Guwahati, Guwahati, India. *(8-10 Dec-2011, Poster presentation)*
15. **36th OSI Symposium on Frontiers in Optics and Photonics (FOP11) 2011**, IIT Delhi, India. *(3-5 Dec-2011)*
16. Organized and participated in workshop on **Recent Trends in Nanophotonics 2011,** IIT Delhi, India. *(30 Sep-1 Oct-2011, Poster presentation)*
17. **Nanotechnology Business: The giant in Dwarfs 2009**, Organized by Confederation of Indian Industry (CII) at Hotel Taj, New Delhi, India.

ORGANISER

1- **Secretary**, International Conference on Advanced Materials- ICAM-2019, Organised by Centre for Nanoscience and Nanotechnology at Jamia Millia Islamia (Central University), New Delhi. (March 06-07, 2019) (Participants- 650+).

2- **Convener**, One day UKIERI-Workshop on "*Photo-Rechargeable Perovskite Batteries for future mobility"* Organized at Centre for Nanoscience and Nanotechnology, Jamia Millia Islamia (Central University), New Delhi. (March 08, 2019). (Participants- 50+).

CONSULTANCY PROJECTS

1. Successfully completed consultancy project with Nano-Lit Technologies (NLT) Limited, Edinburgh, on the Application of Quantum Dots for Lightening Products. [Amount: 4200 GBP]

PRESENT RESEARCH INTREST

1. Energy Storage devices, Photo-Battery for Energy storage
2. Flexible and Stretchable Electrodes for next generation Energy devices
3. Solar Water Splitting-H_2 production
4. Optoelectronics of Metal Halide Organo-Perovskites for Photo-detectors, LED applications