CURRICULUM VITAE

Dr. Javid Ali
Assistant Professor
Department of Physics
Jamia Millia Islamia, New Delhi

Curriculum Vitae

Name : **Dr. Javid Ali**

Present Position : **Assistant Professor**

Address : **Department of Physics, Jamia Millia Islamia**

New Delhi-110025

Email : **javidphy@gmail.com, jali1@jmi.ac.in**

Mobile No. : **09312977016**

Field of Specialization: **Material Science, Nanoscience & Nanotechnology**

ACADEMIC RECORD:

Examination	Board/ University	Div./Percentage
Ph.D	Jamia Millia Islamia University (New Delhi)	---
B.Ed.(Phys, Maths)	Jamia Millia Islamia University (New Delhi)	**1st**
M.Sc.(Physics)	CCS University, Meerut	**1st**
B.Sc.(P.C.M.)	CCS University, Meerut	**1st**
12th standard	U.P.Board	**1st**
10th standard	U.P.Board	**1st**

OTHER QUALIFICATION:

- **NET Qualified**-Conducted by **CSIR-UGC JOINT EXAMINATION**.
- One year certificate course in **Russian language** from Jamia Millia Islamia in 2015-16.

TECHNICAL EXPERTISE:

- Low Pressure Chemical Vapor Deposition System
- Plasma Enhance Chemical Vapor Deposition System
- Electron Cyclotron resonance Chemical Vapor Deposition System
- High Resolution Scanning Electron Microscope
- Scanning Electron Microscope
- High Resolution Transmission Electron Microscope
- High Resolution XRD

- Field Emission Measurement
- RF and DC sputtering
- Scanning Probe Microscope
- Thermal Chemical Vapor Deposition System
- Ball Mill
- Spin coating System
- I-V measurement

PROJECTS ONGOING /COMPLETED:

- A project is received under **Start up Grant** scheme (10 Lakhs) from UGC, India.

HONOURS/AWARDS/FELLOWSHIPS RECEIVED:

- Invited as Judge by **National Science Centre, Delhi**, for the evaluation of science projects/models in Northern India Science Fair (NISF 2015-16) organized by National Science Centre on 16th January, 2017.
- Received **Dr.Bhusan Gold Madel for Best Student of M.Sc. (PHYSICS) 2005**.
- Received **3rd** Prize in **University Level in** the event **PHYSICS QUIZ COMPTATION at D.A.V.College Saharanpur (U.P.)**.
- **SRF (Senior Research Fellowship)** In DIT Project cost of project 4 crore under **Prof. Mushahid Husain.**
- **JRF (Junior Research Fellowship)** In DRDO (Ministry of Defence) Project entitled "Growth of Multi-walled Carbon Nanotube Suitable for Devices Applications" Under **Prof. Mushahid Husain.(From Oct.01, 2007 to March 31, 2011)**
- Received **Ist Prize** in **Obstacle race** in sport day held on Faculty of Education Jamia Millia Islamia, New Delhi
- Various Prizes in academic field at school and college level.

ADMINISTRATIVE RESPONSIBILITIES:

- **Warden** of FRK hostel, JMI.
- **Examination Incharge**, Department of Physics, Faculty of Natural Science, JMI.
- **Asstt. Superintendent of Exam**, M.Sc. (Physics), B.Voc. Solar Energy Exam, Physics Department, Faculty of Natural Science, JMI, December 2018, and May 2019.
- **Asstt. Superintendent of Exam**, B.Voc. Solar Energy Exam, Physics Department, Faculty of Natural Science, JMI, May 2016.

ACADEMIC WORK:

- Developed the syllabi of the Courses "Instruments and Measurements" for B. Sc. Physics.
- Redesigned the syllabus of the Course "Digital Electronics" for B. Sc.(H/P/S).

COURSES TAUGHT:

Undergraduate Courses:

- Digital Electronics
- Atomic and molecular Physics
- Measurements and Instrumentation
- Properties of Matter
- Solid State Physics
- Lab. I, VI and III (Hons/Pass and subs.)

Postgraduate Courses:

- M.Sc. (Previous) Lab.
- M.Sc. (Sem-II) Lab

RESEARCH GUIDANCE:

Ph.D Thesis awarded:

1. **Tahir Murtaza**

   Topic of research: Synthesis, characterization and properties of composite multiferroics.

Ph.D in progress:

1. **Nagma Ansari**

   Topic of research: Synthesis and characterization of carbon nanostructures for device applications.

2. **Mohammad Moeen Hasan Raza**

   Topic of research: Synthesis of carbon nanotubes and their study in CNTs based Solar cell.

3. **Mohd. Sadiq**

   Topic of research: studies on Gel-polymer electrolytes for solid state supercapicatos.

4. **Shafi ul Islam**

   Topic of research: Synthesis and Characterization of Transition Metal Doped Compound Semiconductors for Optoelectronic device Applications.

Project Guided at PG level:

2019

1. **Vivek Kumar (2019)**

Thesis Title: Study of Multi-walled carbon nanotubes grown on spin coated catalyst layer of transition metal.

2. **Robin Dahiya (2019)**

Thesis Title: Study of Optical Properties of Reduced Graphene Oxide Decorated with MgO nanoparticles.

3. **Ayush Jain (2019)**

Thesis Title: Study on free standing polymer electrolyte thin film for electrochemical device applications.

4. **Somya Jain (2019)**

Thesis Title: Ploy(O-toluidine)/Single welled carbon nanotubes (pot/swcnts) polymer nanocomposites.

5. **Mohd Sanu (2019)**

Thesis Title: Metal oxide nanostructures ZnO/Cu-ZnO synthesis by Sol-Gel.

2018

6. **Salman Zahid (2018)**

Thesis Title: Synthesis of multiwalled carbon nanotubes and their electrical properties.

7. **Sonika Kodan (2018)**

Thesis Title: Synthesis and characterization of Zinc oxide nanocomposites by sol-gel process.

8. **Abhishek Singh (2018)**

Thesis Title: Synthesis of reduced graphene oxide and their characterization.

9. **Vikash Singh (2018)**

Thesis Title: Synthesis and electrical characterization of carbon nanotubes.

2017

10. **Mushyada Khanam (2017)**

Thesis Title: Synthesis and characterization of r-GO decorated with silver nanoparticles.

11. **Menka Sharma (2017)**

Thesis Title: Thin film growth of ZnO nanocomposites (ZnO/PVA)

12. **Honey Mittal (2017)**

Thesis Title: Synthesis and characterization of Se thin film.

13. **Mohammad Moeen Hasan Raza (2017)**

Thesis Title: Synthesis of carbon nanotubes by ECR-CVD and its structural study.

14. **Zubair Aslam (2017)**

Thesis Title: Dielectric and Electrical properties of amorphous Selenium.

MEMBERSHIPS:

- The Indian Science Congress Association (Life membership No. L19397)
- Semiconductor Society of India (SSI) Life member (No. SSI/JA/1709)

WORKSHOPS/CONFERENCES ORGANISED AS AN ORGANISING MEMBER:

- National Conference on Nanotechnology and Renewable Energy (**NCNRE-14**), April 28-29, 2014; Jamia Millia Islamia, New Delhi-110025

- International workshop on the Physics of Semiconductor Devices: **IWPSD 2009**, Dec 15-19 2009: Jamia Millia Islamia, New Delhi-110025.
- International workshop on the Physics of Semiconductor Devices: **IWPSD 2013**, Dec 15-19 2013: Amity University, Noida-125.
- National Conference on Nanomaterials: Synthesis, characterization and Applications (**NSCA-2015**), 14 March, 2015; Centre for Nanoscience and Nanotechnology, Jamia Millia Islamia, New Delhi-110025

INVITED TALK/ORAL PRESENTATION IN CONFERENCES:

- Session Chaired in Invited talk in Third International Conference on Nanomaterials: Synthesis, Characterization and Applications (**ICN 2018**) on 11, 12 and 13 May 2018 at Mahatma Gandhi University, Kottayam, Kerala, India.
- Invited talk in Third International Conference on Nanomaterials: Synthesis, Characterization and Applications (ICN 2018) on 11, 12 and 13 May 2018 at Mahatma Gandhi University, Kottayam, Kerala, India.
- Oral presentation at International Conference on Advances in Nanotechnology (ICANAT) held on 6-8 Nov. 2008, MATS University, Raipur, Chhattisgarh, INDIA)

REFERENCES:

Prof. M. Husain
Vice Chancellor
MJP Rohilkhand Uni. Bareilly, UP
& Former Director, Centre for Nanoscience and Nanotechnology, JMI, New Delhi-25

Dr. Harsh
Associate Director & Scientist G (Retd)
Solid State Physics Lab., Delhi &
Centre for Nanoscience and Nanotechnology, JMI

PAPERS PUBLISHED/COMMUNICATED IN INTERNATIONAL JOURNALS:

2018

26. Structural and Field emission properties of carbon nanotubes decorated with low work function material, Mohammad M. H. Raza, Sunny Khan, Mohd Sadiq, Mohammad Zulfequar, Mushahid Husain, and **Javid Ali**, Journal of Nanoscience & Nanotechnology.

Communicated

25. Structural, Electrical and Magnetic Properties of Multiferroic NdFeO3-SrTiO3 Composites, Tahir Murtaza, Imran A Salmani, Tasaduq Hussain, **Javid Ali**, K. Asokan, Mohd. Shahid Khan. Journal of Materials Science: Materials in Electronics, November 2018, Volume 29, Issue 21, pp 18573–18580.

24. Structural, electrical and magnetic properties of multiferroic BiFeO3–SrTiO3 composites Article in Journal of Materials Science: Materials in Electronics.
Tahir Murtaza, **Javid Ali**, Mohd Shahid Khan, K. Asokan, February 2018, Volume 29, Issue 3, pp 2110–2119.

23. Effect of Mo doping at B site on Structural and Electrical properties of multiferroic BiFeO3" , Journal of Superconductivity and Novel Magnetism, Tahir Murtaza, **Javid Ali**, Mohd Shahid Khan. June 2018, Volume 31, Issue 6, pp 1955–1959.

22. Preparation and Study of (1-x)CuFe2O4-xBaTiO3 (x=0, 0.1&1) Composite Multiferroics, Tahir Murtaza, **Javid Ali**, Mohd Shahid Khan, Indian Journal of Physics**,** July 2018, Volume 92, Issue 7, pp 835–840.

21. Structural, Electrical and Magnetic study of multiferroic $Bi_{1-x}NdxFeO_3$. Journal of Materials Science Materials in Electronics Tahir Murtaza, **Javid Ali**, Mohd Shahid Khan, K. Asokan, Journal of Materials Science: Materials in Electronics, March 2018, Volume 29, Issue 6, pp 5110–5115.

2017

20. A review on carbon nanotubes based organic solar cells, Ali Raza, **Javid Ali**, Invertis Journal of Renewable Energy, Vol. 7, No.4, 2017; pp.187-199, Article DOI : 10.5958/ 2454-7611. 2017.00026.1.

2016

19. Decoration of Zinc Oxide Nanoparticles on Vertically Aligned Single Wall Carbon Nanotubes: An Efficient Field Emitter, Shama Parveen, Samina Husain, Avshish Kumar, **Javid Ali**, Mushahid Husain, Harsh, M Zulfequar, Materials Research Bulletin · May **2016**, ISSN: 0025-5408.

18. Synthesis of reduced Graphene Oxide and enhancement of its electrical and optical properties by attaching Ag nanoparticles" S Khan, **Javid Ali**, Harsh, M. Husain, M Zulfequar, Physica E: Low dim.materials., March 2016.

17. Synthesis and characterization of new photoluminescent material tris (2-methyl 8-hydroxy quinoline) europium $Eu(mq)_3$. Kumar Rahul, Singh Veerta, **Ali Javid,** Invertis Journal of Renewable Energy,Vol.6(1),2016 . Print ISSN : 2231-3419. Online ISSN : 2454-7611.

2015

16. Synthesis and Characterization of Multi-Layer Graphene Using Low Pressure Chemical Vapor Deposition Method. S Khan, **J Ali**, A Kumar, J Singh, N Dilawar, M Zulfequar, M. Husain. Advanced Science Letters, 2015, Vol.21, Number 9, Sep. 2015, pp. 2940-2942(3)ISSN: 1936-6612 (Online).

15. Improved Field Emission Properties of Carbon Nanotubes by Dual Layer Deposition

Shama Parveen, Samina Husain, Avshish Kumar**, Javid Ali,** Harsh, Mushahid Husain Journal of Experimental Nanoscience, Volume 10, Issue 7, 3 May 2015, Pages 499-510. ISSN: 1745-8080 (Print), 1745-8099 (Online)

2014

14. Enhancement of field emission property of carbon nanotubes by ECR plasma treatment. **Javid Ali**, Avshish Kumar, Samina Husain, Mubashshir Husain, Shama Parveen, Renu Choithrani, Mohammad Zulfequar, Harsh and Mushahid Husain
Journal of Nanoscience Volume 2014, Article ID 437895, 5 pages,
ISSN: 2356-749X (Print) ISSN: 2314-6931 (Online)

13. A comparative study of nitrogen plasma effect on field emission characteristics of single wall carbon nanotubes synthesized by plasma enhanced chemical vapor deposition.

Avshish Kumar, Shama Parveen, Samina Husain**, Javid Ali**, Mohammad Zulfequar,Harsh, Mushahid Husain,.Applied Surface Science 322 (2014) 236–241.
ISSN: 0169-4332

12. Effect of oxygen plasma on field emission characteristics of single-wall carbon nanotubes grown by plasma enhanced chemical vapour deposition system. Avshish Kumar, Shama Parveen, Samina Husain, **Javid Ali**, Mohammad Zulfequar, Harsh, and Mushahid Husain.Journal of Applied Physics 115, 084308 (2014*) doi: 10.1063/1.4866995*ISSN: 0021-8979, E-ISSN: 1089-7550

2013

11. Field-Emission Study of Carbon Nanotubes Grown by Low Pressure Chemical Vapour Deposition on Single and Dual Layer of Catalyst, Physics of Semiconductor Devices pp 527-529, Springer Link, 2013 **Javid Ali**, Avshish kumar, Samina Husain, Shama Parveen, SunnyKhan, M.Husain

10. Carbon Nanotubes: A Material of 21st Century.**Javid Ali,** Mubashshir Husain Avshish Kumar, Samina Husain, Shama Parveen and M. Husain.Invertis Journal of Science and Technology, Vol.6, No. 2, 2013; pp.63-77.ISSN: 0973-8940,

9. Enhanced Field Emission Properties of Carbon Nanotube Based Field Emitters by Dynamic Oxidation.Shama Parveen, Samina Husain, Avshish Kumar**, Javid Ali,** Mubashshir Husain, Harsh, Mushahid Husain.Current Nanoscience, Vol. 9, Number 5, October 2013, pp. 619-623(5).ISSN: 1875-6786 (Online), ISSN: 1573-4137 (Print)

8. Field Emission of MWCNTs/PANI Nanocomposites Prepared by Ex Situ and In Situ Polymerization Methods**.**Samina Husain, Shumaila, Shama Parveen, **Javid Ali**, Avshish Kumar, M. Husain**.**Polymer Composites, Volume 34, Issue 8, pages 1298–1305, August 2013.ISSN: 1548-0569 (Online),

7. Field Emission Behaviour of the Single Wall Carbon Nanotubes Grown by Plasma Enhanced Chemical Vapour Deposition (PECVD) System.Avshish Kumar, Shama Parveen, Samina Husain, **Javid Ali**, Harsh, M. Husain.*J.Nano-Electron.Phys* Vol. 5 No 2, 02012(3pp) (2013).ISSN: 2077-6772 (Print); 2306-4277 (Online),

2012

6. Study of J-E Curve with Hysteresis of Carbon Nanotubes Field Emitters, Shama Parveen, Samina Husain, Avshish Kumar, **Javid Ali,** Harsh, Mushahid Husain, ISRN Nanomaterials, Vol. 2012, Article ID 971854, 5 pages, 2012. ISSN: 2090-8741 (Online),

5. Field emission study of carbon nanotubes forest and array grown on Si using Fe as catalyst deposited by electro chemical method.Avshish Kumar, Samina Husain, **Javid Ali,** Harsh, M. Husain. Journal of Nanoscience and Nanotechnology, Vol. 12, Pages 2829-2832, 2012.ISSN: 1533-4880 (Print); EISSN: 1533-4899 (Online),

2011

4. Estimation of Effective Emitting Area of Carbon Nanotubes based Field Emitter, Shama Parveen, Samina Husain, Avshish Kumar, **Javid Ali**, Mushahid Husain, Nanoscience and Nanoscience Letters, Vol.3 (6), 794-797, 2011.ISSN: 1941-4900 (Print); EISSN: 1941-4919 (Online),

3. Field-Emission Study of Multi-Walled Carbon Nanotubes Grown on Si Substrate by Low Pressure Chemical Vapor Deposition.**Javid Ali,** Avshish Kumar, Samina Husain, Shama Parveen and M. Husain.J.Nano-Electron.Phys. 3 (2011) No.1, P.358-361

ISSN: 2077-6772 (Print); 2306-4277 (Online),

2. Characterization and field emission studies of uniformly distributed multi-walled carbon nanotubes (MWCNTs) film grown by low-pressure chemical vapour deposition (LPCVD). **Javid Ali,** Avshish Kumar, Samina Khan, Monika Kumari, Dr. Harsh, S. K Agarwal, Mushahid Husain.Current Nanoscience, 2011, 7, 333-336. ISSN: 1875-6786 (Online)**,** ISSN: 1573-4137 (Print)

1. Effect of catalyst deposition methods on the alignment of carbon nanotubes grown by LPCVD.**Javid Ali,** Avshish Kumar, Samina Husain, Harsh, and M. Husain Nanoscience and Nanoscience Letters, Vol.3, 175-178, 2011;ISSN: 1941-4900 (Print); EISSN: 1941-4919 (Online),

Book Chapter:

- Synthesis of Graphene by Low Pressure Chemical Vapor Deposition (LPCVD) Method, Recent Trends in Materials and Devices, 2016, 119-123**.** Sunny Khan , **Javid Ali**, Harsh , M.Husain , M.Zulfequar.

PAPERS PUBLISHED/COMMUNICATED IN CONFERENCES:

2018

23. Dielectric Study of Mo doped Multiferroic $BiFeO_3$
Tahir Murtaza, **Javid Ali**, Mohd. Shahid Khan (June 3-7, 2018 **IcAUMS 2018.**)

2017

22. Effect of Ammonia gas plasma on field emission properties of Carbon Nanotubes, **Javid Ali**, Sunny Khan, M. Zulfequar, Harsh, M Husain in (**IWPSD-2017**, 11-15 December, 2017 at IIT Delhi).

21 Effect of Nd doping at A site on Structural and Electrical properties of multiferroic BiFeO, Tahir Murtaza, **Javid Ali**, Mohd. Shahid Khan in (**IWPSD-2017**, 11-15 December, 2017 at IIT Delhi)

20. Structural and Optical Study of Ceramic NdFeO3 Prepared by Solid-State Reaction Method in "5th National Conference on Advances in Metrology (AdMet-2017)" Organized by The North Cap University, Gurugram and National Physical Laboratory (NPL) New Delhi, India on 23-25th March 2017

19. Effect of growth temperature on optical and Electrical properties of graphene grown on copper film using LPCVD method, Conference paper, **ICETNEM,2017**, ISBN 978-81-89843-87-8 Sunny Khan , **Javid Ali** , Harsh , M.Husain , M.Zulfequar.

18. Change in the field-emission property of PANI Nanofibers induced by using SWCNTs: Synthesis and characterizations, Nagma Ansari, Shumaila, Mohd. Yaseen Lone, **Javid Ali,** S. Husain Synthesis and characterizations" **NANOflm** 2017 Nov.16-17, 2017, held at Gautam Buddha University, Greater Noida,U.P.

2016

17. Preparation and Study of Mo-doped Multiferroic BiFeO3" in "International Conference on Advances in Nanomaterials and Nanotechnology" (ICANN-2016) 4 -5th November 2016, New Delhi, India

2014

16. Synthesis and characterization of multi layer Graphene using Low Pressure Chemical Vapor deposition Method, Sunny Khan, **Javid Ali**, Avshish Kumar, Jasveer Singh, Nita Dilawar, Harsh, M. Husain. **ICCMP**, Nov.25-30, 2014, held at III-TM Gwalior.

15. Selective Growth of Single wall Carbon Nanotubes Uniformly Grown by Plasma Enhanced Chemical Vapor deposition system, Mohd. Yaseen Lone, Avshish Kumar, Shama Parveen, **Javid Ali,** Samina Husain, Mohd. Zulfequar, M. Husain. **ICCMP**, Nov.25-30, 2014, held at III-TM Gwalior, M.P.

14. Synthesis and Characterization of Multi-layer Graphene using Low Pressure Chemical Vapour Deposition (LPCVD)Method**,** Sunny Khan**, Javid Ali,** Avshish Kumar, Jasveer Singh, Nita Dilawar, Harsh, M. Husain **(IWCCMP2014_25-30 Nov.2014, p.p. 83).**

2013

14. Field-Emission study of Carbon Nanotubes grown by Low Pressure Chemical Vapour Deposition (LPCVD) on single and dual layer catalyst
Javid Ali, Avshish Kumar, Samina Husain, Shama Parveen, Sunny Khan, Harsh, M. Husain **(IWPSD_10-14 Dec.2013, p.p. 527-529), ISBN 978-3-319-03001-2.**

13. Raman characteristics of vertically aligned single walled carbon nanotubes grown by plasma enhanced chemical vapor deposition system**,** Avshish Kumar, Samina Husain, Shama Parveen, **Javid Ali,** M.Zulfequar, Harsh, M.Husain **(IWPSD_10-14 Dec.2013, p.p. 563-564), ISBN 978-3-319-03001-2.**

12. Study of forster`s resonance energy transfer between MWCNT and phenoxazone 660. Mohd.Shahid Khan, **Javid Ali**, Avshish Kumar, M.Husain
(IWPSD_10-14 Dec.2013, p.p. 521-522), ISBN 978-3-319-03001-2.

11. Field Emission Behaviour of the Single Wall Carbon Nanotubes Grown by Plasma Enhanced Chemical Vapour Deposition (PECVD) System" Avshish Kumar, Shama Parveen, Samina Husain, **Javid Ali**, Harsh, Mushahid Husain **ISSMD 2013**, Jammu

10. Highly efficient field emission characteristics of ultra-long vertical aligned single wall carbon nanotubes**,** Shama Parveen, Samina Husain, Avshish Kumar, **Javid Ali**, Harsh, M.Husain**. (IWPSD_10-14 Dec.2013, Amity University, Noida), ISBN 978-3-319-03001-2**

9. Field emission study of the single wall carbon nanotubes (SWCNTs) grown on Fe catalyst film using PECVD System" Avshish Kumar, Shama Parveen, Samina Husain, **Javid Ali**, Harsh, Mushahid Husain , **ATNN-2013,** 25th Feb, 2013 JMl, New Delhi

2012

8. Electron Field Emission Study Of Carbon Nanotubes Grown By Low Pressure CVD With Co-Catalyst" Shama Parveen, Samina Husain, Avshish Kumar, **Javid Ali** Harsh, Mushahid Husain, National Conference On Recent Trends in Material Science Research **RTMSR-2012**, September 3-5, 2012 NIT Srinagar

2011

7. Field emission of CNTs/PANI based nanocomposite" Samina Husain, Shumaila, Shama Parveen, Avshish Kumar, **Javid Ali**, Mushahid.Husain **IWPSD-2011** Kanpur 18th -22nd Dec. 2011**.**

6. Study of Field emission of Carbon Nanotubes grown by Low Pressure Chemical Vapor Deposition" Shama Parveen, Zakiya Sheerin, Avshish Kumar, **Javid Ali**, Samina Husain, Harsh, Mushahid Husain **Workshop on Nanoscience and Nanotechnology** in Aligarh 26th-27th March 2011

2009

5. I-V Characterization of Uniformly Distributed Multi-Walled Carbon Nanotubes (MWCNTs) Film Grown by Low-Pressure Chemical Vapour Deposition (LPCVD) Avshish Kumar, **Javid Ali,** Samina Khan, Mubashshir Husain, Harsh and M. Husain **(IWPSD_14-19 Dec.2009, p.p. 972-974), ISBN 93-80043-59-7**

2008

4. Low Pressure Chemical Vapor Deposition(LPCVD) synthesis and characterization of Multi walled Carbon nanotubes**.** Samina Khan, Avshish Kumar**, Javid Ali,** S.K.Agarwal, M.Husain **(APAM_ 18-20 Nov.2008, NPL, New Delhi)**

1. Synthesis and characterization of Carbon Nanotubes grown of Si substrate by Low pressure Chemical Vapour Deposition **Javid Ali,** Avshish Kumar, Samina Khan and M. Husain **(ICANAT_ 6-8 Nov. 2008, MATS University, Raipur)**

2. Synthesis and Characterization of Multi-walled Carbon Nanotubes (MWCNTs) **Javid Ali,** Avshish Kumar, M. Zulfequar and M. Husain **(Info-fest _1 Nov. 2008, Jamia Millia Islamia New Delhi-110025)**

1. Growth and Characterization of Multi-walled Carbon Nanotubes (MWCNTs) grown on Fe by Low-Pressure Chemical Vapor Deposition (LPCVD) Avshish Kumar**, Javid Ali,** Samina Khan, M. Zulfequar and M. Husain **(FECIIT_13-15 Oct. 2008, p.p. 19-21, I.S.M. University Dhanbad)**

CONFERENCES/SEMINARS ATTENDED:

- International Workshop on 'Trends in Solar Power Generation and Energy Harvesting" in Dubai during 27-29 March 2017
- Third International Conference on Nanomaterials: Synthesis, Characterization and Applications (ICN 2018) on 11, 12 and 13 May 2018 at Mahatma Gandhi University, Kottayam, and Kerala, India.
- International Workshop on Recent Trend on Materials and Devices (ICRTMD-2015), December 15-17, 2013, Amity University, Noida, UP.
- 18th International Workshop on the Physics of Semiconductor Devices (IWPSD), December 10-13, 2013, Amity University, Noida, UP.

- One day seminar on “Progress in Physics of Materials and Theoretical Physics” on 3rd February 2012, Jamia Millia Islamia, New Delhi.
- XVIth International Workshop on Physics of Semiconductor Devices (IWPSD-2011), 19-22 December 2011, IIT Kanpur.
- ISSMD-2011, 28-30 January 2011, The M.S.University of Baroda, Vadodara, India
- 15th International Workshop on the Physics of Semiconductor Devices (IWPSD), December 16-20, 2009, Jamia Millia Islamia, New Delhi, India.
- National Seminar on Condensed Matter, High Energy and Nuclear Physics, 23-24 March , 2009, Jamia Millia Islamia New Delhi.
- Natural Science InfoFest NSIF-08, March 4-6, 2008, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi-110025.
- Non Equilibrium Phenomena in Condensed Matter, 21-23 February 2008, Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi-110002
- Seminar on Development in Materials, High Energy and Nuclear Physics, February 20-21, 2008, Jamia Millia Islamia, New Delhi-110025.
- National Seminar on Nano Materials & Devices, January 30, 2008, Jamia Millia Islamia, New Delhi-110025.
- 14th International Workshop on the Physics of Semiconductor Devices, December 16-20, 2007, IIT/TIFR, Mumbai, India.
- Sixth Abdus Salam Memorial Lecture 2007-08 by Prof. Douglas D. Osheroff (Noble Laureate), Stanford University, Stanford, California, U.S.A. on “How Advances in Science are Made” 24th November 2007 at Jamia Millia Islamia, New Delhi-110025.

A BRIEF SUMMARY OF MY RESEARCH WORK:

Synthesis and characterization of carbon nanotubes and Graphene:

Carbon nanotube (CNT) can be considered wrapping of graphite layer into seamless carbon cylinder. Carbon nanotube composed of single such cylinder is known as single-wall nanotubes (SWNTs). When concentric cylinders are arranged, the CNT is called multi-wall nanotubes (MWNTs). The diameter of such CNT's ranges from less than a micron to 3 micron for SWNT and upto few tens of microns in case of MWNT's. There is no limit on the length of CNT's and it can be few hundreds of micron in length. Depending upon the wrapping or folding angle, nanotubes can be metallic or semiconducting. Modeling of CNT's indicates that the band gap of semi-conducting nanotubes decreases with increasing diameter. These predictions have been verified in recent scanning spectroscopy experiments. In 1991, MWNTs were discovered by Iijima in the carbonaous stalagmite-like deposit, which was left on an electrode during the synthesis fullerene soot produced by a carbon arc. Carbon nanotubes are a new form of carbon with unique electrical and mechanical properties. These useful properties make CNTs a sort of excellent material that may be used in many fields. But at present use of CNTs in various emerging applications is at nascent stage and main discouraging factor is cost of pure CNT's. Hence we investigate production of CNTs on a large scale to reduce the synthesis costs of CNTs.

- The research work has been summarised as below:
- Growth of uniformly distributed multi-walled carbon nanotubes by low pressure chemical vapor deposition (LPCVD) and their characterizations.
- Growth of CNTs on different substrates.
- Growth of CNTs using different catalyst like Fe, Co, Ni, $CrSi_2$.
- Growth of CNTs using different catalyst deposition methods.
- Enhancement of field emission properties of carbon nanotubes by electron cyclotron resonance (ECR) plasma treatment.

****