

## **CURRICULUM VITAE**

1. **Name** : ZISHAN HUSAIN KHAN
2. **Designation** : Professor
3. **Date of Birth** : Aug. 01, 1970
4. **Institution** : Jamia Millia Islamia (central University),  
New Delhi (India).
5. **Permanent Address** : Department of Applied Sciences and  
Humanities, Faculty of Engineering and  
Technology  
Jamia Millia Islamia, New Delhi-110025  
E.mail ; [zishan\\_hk@yahoo.co.in](mailto:zishan_hk@yahoo.co.in)
6. **Qualification** : M.Sc. (Materials Science)  
Ph.D. (Materials Science)
7. **Research Fields** : *1. Nano-chalcogenides for memory devices*  
*2. Nanostructures - Carbon Nanotubes*  
*and Semiconducting Nanoparticles*
8. **Teaching Experience** : 18 Years
9. **Research Experience** : 22 Years
10. **Academic Distinctions**
  - **Post Doctoral Research Experience** ;Worked as Post doctoral fellow at Center for Nanoscience and Technology, National Tsing Hua University, Hsinchu, Taiwan, Dec. 2001 to Jan. 31, 2005.
  - **Establishment the Center of Nanotechnology** at King Abdul Aziz University, Jeddah, Saudi Arabia (Oct. 2007 to July 2012).
  - **Member of scientific committee** of International Conference on Nanotechnology organized by Center of Nanotechnology, King Abdul Aziz University, Jeddah, Saudi Arabia (June 17-19, 2008).
  - **Member of organizing committee** of Workshop on Nanotechnology; Opportunities and Challenges organized by Center of Nanotechnology, King Abdul Aziz University, Jeddah, Saudi Arabia (June 14-16, 2008).
  - **Convener**, National Conference on Nanotechnology and Renewable Energy (NCNRE-14) organized by Department of Applied Sciences & Humanities, Jamia Millia Islamia, New Delhi-110025 (April 28-29, 2014).
  - **Local Organising Secretary**, International Conference on Special Functions and Applications, Sept. 09-11, 2016.
  - **Editor-in-Chief**, Indian Sciences and Engineering Journal, Published by American Scientific Publishers (USA)
  - **Guest Editor** of the following journals ;

- International Journal of Nanoparticles (UK)
- International Journal of Nano-Biomaterials (UK)
- International Journal of Nanomanufacturing (UK)
- Advanced Science Letters (USA)
- Journal of Nanomaterials (USA)
- Current Nanomaterials (UAE)

## 11. Administrative Responsibilities

- **Honorary Deputy Director**, Internal Quality Assurance Cell, Jamia Millia Islamia (2016-till date)
- **Sr. Warden**, Kellat Hostel, Jamia Millia Islamia, New Delhi (2015-till date).
- **Sr. Warden**, Sir A. M. Khwaja Hostel, Jamia Millia Islamia, New Delhi (2013-2015).
- Superintendent, B.Tech. Entrance Examinations (2014).
- Warden, Kellat House Hostel, Jamia Millia Islamia, New Delhi(1997-1998).
- Warden, Pink House Hostel, Jamia Millia Islamia, New Delhi(2000-2001).
- Astd. Superintendent, B.Tech. Entrance Examinations (2005, 2006).
- Astd. Superintendent, MBA Entrance Examination (2006).

## 12. Thesis Guided: 04

- Thesis entitled “*Growth and characterization of Carbon Nanotubes grown on Fe and Fe-Pd films*” by Monika Aggarwal (2008).
- Thesis entitled “*Synthesis and characterization of Nano- structures*” by Karunapati Tripathi (2008).
- Thesis entitled “*Electrical and Optical properties of ZnO nanostructures*” by Mr. Islamuddin (2009).
- Thesis Entitled “*Electrical and properties properties of semiconducting nanostructures*” by Mr. Ravi Keshwar Kumar (2014)

### *Work under progress*

- “Studies on Nano-chalcogenides” by Mr. Tanveer Ashraf
- “Studies on Organic Solar Cells” by Mr. Rahul
- “Studies on Nano-biosensors” by Mr. Pramod Kumar Gupta
- “Synthesis and characterization of Organic Semiconducting Nanostructures for opto-electronic Devices” by Mr. Mohammad Bilal Khan
- “Synthesis and Characterization of semiconducting nanostructures” by Mr. Mohammad Parvaz

## 13. Research Projects (Ongoing)

- Awarded major research project entitled "**Enhanced and tunable photoluminescence from metal doped tris (8-hydroxyquinoline)aluminium**

**(Alq3) nanowires for opto-electronic devices”** funded by UGC (April 2013-till date)

#### **Research Projects (Completed)**

- Awarded minor research project entitled **“Optical Properties of Amorphous Semiconductors”** by Jamia Millia Islamia, New Delhi-110025 (2000-2003).
- Awarded a research project entitled **“Synthesis of amorphous semiconducting nanostructures (nanoparticles, nanorods and nanowires) for data storage devices”** from King Abdul Aziz City of Science and Technology, Riyadh, Saudi Arabia (2008).
- Awarded a research project entitled **“Development of carbon nanotubes based nanosensors for monitoring the ultra trace concentration of carbon mono-oxide in air”** from Center of Excellence in Environmental Sciences, King Abdulaziz University Jeddah, Saudi Arabia (2010).
- Awarded a research project entitled **“Crystallization Kinetics in a-Ga<sub>x</sub>Se<sub>70-x</sub>Pb<sub>x</sub> Chalcogenide Glasses”** from Deanship of Scientific Research, King Abdulaziz University Jeddah, Saudi Arabia (2010).

#### **14. Publications**

(i).	Research Papers published in international Journals	: 101
(ii).	Papers Presented in Conferences/workshop	: 36
(iii).	Review articles	: 03
(iv).	Invited Talks	: 05
(v).	Books	: 02
(vi).	Book Chapters	: 03

#### **Books Published;**

1. Advances in Nanomaterials  
(Advanced Structured Materials Series Vol. 79, ISBN 978-81-322-2668-0, Springer (India) Pvt. Ltd.) (2016) **DOI: 10.1007/978-81-322-2668-0\_6**
2. Advances in Nanotechnology and Renewable Energy  
(ISBN No. 978-93-81212-65-3) (2013) (Bharti Publications, New Delhi).

#### **Invited Talks;**

1. *Nanotechnology for Mechanical Engineers.*  
Faculty Development Program, Organized by Department of Mechanical Engg., Jamia Millia Islamia, New Delhi-110025 (27 February-12 March, 2015)

2. *Nanotechnology; Introduction and Applications.*  
Refresher Course on Interdisciplinary Sciences, UGC Academic Staff College, Jamia Millia Islamia, New Delhi-110025 (May 12 to June 02, 2014).
3. *Nanochalcogenides; Synthesis and Characterization.*  
National Conference on Nanoscience and Nanotechnology **ALIGARH NANO-III**,  
March 15-16, 2013, Aligarh Muslim University, Aligarh.
4. *Effect of CO gas on the electrical properties of Carbon Nanotubes*  
17<sup>th</sup> National Seminar on Physics and Technology of Sensors, Jamia Millia Islamia,  
11 – 13 March, 2013
5. *Electrical and gas sensing properties of multi-walled carbon nanotubes films.*  
National Conference on Nanoscience and Nanotechnology” **ALIGARH NANO-II**,  
March 10-12, 2012, Aligarh Muslim University, Aligarh.
6. *Electrical Transport in Nicatalyzed multi-wall carbon nanotubes.*  
International Conference of Nanotechnology (ICON008) organized by Center of  
Nanotechnology, King Abdul Aziz University, Jeddah, Saudi Arabia, (June17-19,  
2008).

### **Book Chapters;**

1. *Chalcogenides to nanochalcogenides; Exploring possibilities for future R&D,*  
Zishan H. Khan· Shamshad A. Khan· Faisal A. Agel· Numan A. Salah & M. Husain  
Advances in Nanomaterials, M. Husain & Zishan H. Khan (Ed.)(2016), (Advanced  
Structured Materials Series Vol. 79, Springer (India) Pvt. Ltd.) (2016), ISBN 978-81-322-  
2668-0
2. *Introduction to Nanomaterials*  
Advances in Nanomaterials(Springer), M. Husain & Zishan H. Khan (Ed.)(2016),  
(Advanced Structured Materials Series Vol. 79, ISBN 978-81-322-2668-0, Springer (India)  
Pvt. Ltd.) (2016), ISBN 978-81-322-2668-0
3. *Nanotechnology for Biological Sciences,*  
M. Husain & Zishan H. Khan,  
Modern Biotechniques and Biotechnology, Neelima Gupta & D. K. Gupta (Ed.)  
(2015) Discovery Group

## LIST OF PUBLICATIONS ;

### Submitted Papers

1. *Ag-incorporated Alq<sub>3</sub> Nanowires: Promising Material for Organic Luminescent Devices*  
Mohd. Bilal Khan & Zishan H. Khan  
J. of Lum. (Elsevier) (Under minor revision)
2. *Amino acid Functionalized ZrO<sub>2</sub> Nanoparticles decorated Reduced Graphene Oxide based Immunosensor*  
Gupta, Pramod K., Prem Prakash Sharma, Anshu Sharma, Zishan H. Khan, and Pratima R. Solanki  
Advanced Healthcare Materials (Wiley-VCH)
3. *Studies on selenium rich Lead Chalcogenide Pb<sub>5</sub>Se<sub>95-x</sub>Zn<sub>x</sub> (X = 0, 2.5, 5 & 10) thin films.*  
Md Tanweer Ashraf, Numan A. Salah, M. Rafat, M. Zulfequar, and Zishan H. Khan  
Materials Science in Semiconductor Processing (Elsevier)
4. *Fabrication of Perovskite Sensitized Solar Cell using PEO Solid Polymer Electrolyte in room environment.*  
Rahul, B. Bhattacharya, Pramod K Singh, and Zishan H. Khan  
Current Nanomaterials
5. *Studies on As-synthesized graphene oxide flakes.*  
Mohd. Parvaz, Numan Salah, and Zishan H Khan

### Review Articles

1. *Carbon nanotube and its possible applications.*  
**Zishan H. Khan** and M. Husain  
Indian J. Mat. Sci. and Engg. (CSIR, New Delhi), **12** 529-551 (2005).
2. *Nanodiamond : Synthesis , Transport Property, Field Emission and applications.*  
**Zishan H. Khan** and M. Husain  
Materials Science Research India **03 (1a)** 1-22 (2006).
3. *Variable range hopping in carbon nanotubes.*  
**Zishan H. Khan**, S. Khan and M. Husain  
Current Nanoscience 6 (2010) 1-16.

### Research Paper Published as a single author;

1. *Electrical Properties of carbon nanotubes (CNTs) decorated with gold nanoparticles film.*  
**Zishan H. Khan**  
Adv. Sci. Lett. 20 (2014) 1471.
2. *Glass Transition Kinetics in ball milled amorphous  $GaxTe_{100-x}$  nanoparticles*  
**Zishan H. Khan**  
Journal of Non-Crystalline Solids (Holland) **380**(2013) 109-113.
3. *Glass Transition Kinetics of  $a-Se_xTe_{100-x}$  nanoparticles.*  
**Zishan H. Khan**  
Sci. Adv. Mater. (USA) **4** (2012) 1.
4. *Non-Isothermal Crystallization in Amorphous  $GaxSe_{100-x}$  Nanorods.*  
**Zishan H. Khan**  
Jap. J. Appl. Phys. (Japan) **50** (2011) 105603.
5. *Electrical and Optical properties of amorphous silicon nanocrystalline film.*  
**Zishan H. Khan**  
Applied Surface Science (Netherland) 255 (2009) 8874–8878.

### Complete List of Publications;

1. *Carbon rich fly ash and their nanostructures*  
Numan Salah, Sami S. Habib, Zishan H. Khan, Ahmed Alshahrie, Adnan Memic and Attieh A. Al-ghamdi  
*Carbon Letters Vol. 19, 23-31 (2016)*
2. *Functionalized Polyacrylonitrile Nanofibers Based Immunosensor for Vibrio cholerae Detection*  
Pramod K. Gupta, A. Gupta, S. R. Dhakate, Zishan H. Khan and Pratima R. Solanki  
J. Appl. Polymers (2016) (In press).
3. *Electrochemical and Antimicrobial Activities of Tellurium Oxide*  
Gupta, Pramod K., Prem Prakash Sharma, Anshu Sharma, **Zishan H. Khan**, and Pratima R. Solanki  
Materials Science and Engineering: B 211 (2016): 166-172.
4. *Lubricant additives based on carbon nanotubes produced from carbon rich fly ash.*  
Salah, Numan, M. Sh Abdel-wahab, Sami S. Habib, and **Zishan H. Khan**.  
*Tribology Transactions* just-accepted (2016): 00-00.

5. *One-Step Electrodeposited Porous ZnO Thin Film Based Immunosensor for Detection of Vibrio cholerae Toxin.*  
Pramod K.Gupta, **Zishan H. Khan**, and Pratima R. Solanki; Journal of The Electrochemical Society 163, no. 7 (2016): B309-B318.
6. *Optical Studies on Zn doped Lead Chalcogenide (PbSe)<sub>100-x</sub>Zn<sub>x</sub> thin films composed of nanoparticles*  
Md Tanweer Ashraf, Numan A. Salah, M. Rafat, M. Zulfequar, and **Zishan H. Khan**  
*Thin Solid Films* 612 (2016): 109-115.
7. *Perovskite sensitized solar cell using solid polymer electrolyte*  
Rahul, B. Bhattacharya, Pramod K. Singh & **Zishan H. Khan**  
International Journal of Hydrogen Energy (2016).  
<http://dx.doi.org/10.1016/j.ijhydene.2015.12.093>
8. *Zinc Oxide-Multi Walled Carbon Nanotubes Nanocomposites for Carbon Monoxide Gas Sensor Application*  
Najlaa D Alharbi, M Shahnawaze Ansari, Numan Salah, Suzan A Khayyat & **Zishan H. Khan**  
*Journal of Nanoscience and Nanotechnology* 16 (1), 439-447 (2016).
9. *Formation of Carbon Nanotubes from Carbon-Rich Fly Ash: Growth Parameters and Mechanism*  
N Salah, AA Al-ghamdi, A Memic, SS Habib & **Zishan H. Khan**  
*Materials and Manufacturing Processes* 31 (2), 146-156 (2015)
10. *UV-irradiated carbon nanotubes synthesized from fly ash for adsorption of congo red dyes in aqueous solution*  
Numan Salah, Sami S Habib, **Zishan H Khan**, Rajeev Kumar, MA Barakat  
*Desalination and Water Treatment*, 1-11(2015)
11. *Electrical Properties of Carbon Nanotubes (CNTs) Decorated with Gold Nanoparticles Film.*  
**Zishan H. Khan**  
*Advanced Science Letters* **20** (7-9), 1471-1474 (2014).
12. *Studies on Alq<sub>3</sub> Nanorods.*  
Mohd. Bilal Khan & **Zishan H.Khan**  
*Advanced Science Letters* **20** (7-9), 1692-1694 (2014).
13. *Studies on Carbon Mono-Oxide Gas Sensing of Carbon Nanotubes Film*  
**Zishan H. Khan**, NA Salah, MS Ansari, AF Sherwani, S Habib  
*Advanced Science Letters* **20** (7-9), 1597-1600 (2014).
14. *Structural, Optical and Electrical Characterization of Polycrystalline Ga<sub>15</sub>Te<sub>85-x</sub> Zn<sub>x</sub> Nano-Structured Thin Films.*  
SA Khan, G Tiwari, RP Tripathi, MA Alvi, **Zishan H. Khan**, FA Al-Agel  
*Advanced Science Letters* **20** (7-9), 1715-1718 (2014).

15. *Carbon Mono-Oxide Gas Sensing Based on Multi-Walled Carbon Nanotubes Decorated with Gold Nanoparticles Based Film Sensors.*  
**Zishan H. Khan**, NA Salah, MS Ansari, SS Habib  
 Advanced Science Letters **20** (7-9), 1268-1273 (2014).
16. *Synthesis and characterization of pure and Tb/Cu doped Alq<sub>3</sub> nanostructures.*  
 N Salah, SS Habib, **Zishan H. Khan**, ND Alharbi  
 Journal of Luminescence **143**, 640-644 (2013).
17. *Glass transition kinetics in ball milled amorphous GaxTe100-x nanoparticles.*  
**Zishan H. Khan**  
 Journal of Non-Crystalline Solids **380**, 109-113 (2013).
18. *Highly Luminescent Material Based on Alq<sub>3</sub>: Ag Nanoparticles.*  
 N Salah, SS Habib, **Zishan H. Khan**  
 Journal of fluorescence **23** (5), 1031-1037 (2013).
19. *Fabrication of Co-doped ZnO nanorods for spintronic devices.*  
 A Azam, F Ahmed, SS Habib, **Zishan H. Khan**, NA Salah  
 Metals and Materials International **19** (4), 845-850 (2013).
20. *Synthesis and characterization of nanoparticles of a-((PbSe)<sub>100-x</sub>Cdx)lead chalcogenides.*  
 M. A. Alvi and **Zishan H. Khan**  
 Nanoscale Res. Letts. **8** (1), 1-10 (2013).
21. *Phase transformation kinetics and optical properties of Ga–Se–Sb phase-change thin films.*  
 F. A. Al-Agell, E. A. Al-Arfaj, F. M. Al-Marzouki, Shamshad A. Khan,  
**Zishan H. Khan**, and A. A. Al-Ghamdi  
 Mater. Sci. in Semiconducting Processing **16**(3), 884–892 (2013).
22. *Syntheses and characterization of thin films of Te<sub>94</sub>Se<sub>6</sub> nanoparticles for semiconducting and optical devices.*  
 Numan Salah , Sami S. Habib, Adnan Memic, NajlaaD.Alharbi, Saeed S. Babkair,  
**Zishan H. Khan**  
 Thin Solid Films 531 70-75 (2013).
23. *Kinetics of Phase Transformation in Nanostructured Ga–Se–Te Glasses.*  
 F. A. Al-Agell, E. A. Al-Arfaj, F. M. Al-Marzouki, Shamshad A. Khan, **Zishan H. Khan**, and A. A. Al-Ghamdi  
 Journal of Nanosci. & Nanotech. . 12 (2013) 1.

24. *Influence of laser-irradiation on structural and optical properties of phase change  $Ga_{25}Se_{75-x}Te_x$  thin films.*  
F. A. Al-Agel, Shamshad A. Khan, F. M. Al-Marzouki, A. A. Al-Ghamdi, **Zishan H. Khan**, M. Zulfequar  
Mat. Lett. 92 (2013) 424.
25. *Study of structure-dependent response kinetics of porous silicon for selective detection of organic vapors.*  
**Zishan H. Khan**, Ameer Azam, Numan A. Salah & Sami Habib  
Phil. Mag. Letters 93(2) (2013) 129.
26. *Study of glass transition and crystallization behavior in  $Ga_{15}Se_{85-x}Pb_x$  ( $0 \leq x \leq 6$ ) chalcogenide glasses.*  
**Zishan H. Khan**, M. A. Alvi, Shamshad A. Khan  
Acta Physica Polonica A 1 (2013) 123.
27. *Effect of Carbon Mono-oxide Gas on Electrical Properties of Carbon Nano Tubes (CNTs) decorated with Platinum Nanoparticles Film.*  
**Zishan H. Khan** & M. Husain  
Physics of Semiconductor Devices, 283, 80-82 (2013)
28. *Direct bandgap materials based on the thin films of  $Se_xTe_{100-x}$  nanoparticles.*  
Numan Salah, Sami S Habib, **Zishan H Khan**  
Nanoscale Res. Letts. (2012) Sep 15;7(1):509. doi: 10.1186/1556-276X-7-509.
29. *Crystallization kinetics in as-synthesis high yield of  $a-Se_{100-x}Te_x$  nanorods.*  
**Zishan H. Khan**, A. Al-Ghamdi & Faisal A. Al-Agel  
Mater. Chem. Phys. 134 (2012) 260.
30. *Direct Bandgap Material Based on Thin Film of  $Te_{97}Ga_3$  Nanoparticles*  
N Salah, SS Habib, Zishan H. Khan  
ECS Journal of Solid State Science and Technology 1 (5), Q96-Q99
31. *Growth of Carbon Nanotube On Catalysts Obtained From Carbon Rich Fly Ash.*  
N Salah, SS Habib, **Zishan H. Khan**, AMemic, MN Nahas  
Digest Journal of Nanomaterials and Biostructures 7, 1279-1288, (2012).
32. *Synthesis and characterization of  $Se_{35}Te_{65-x}Ge_x$  nanoparticle films and their optical properties.*  
Numan Salah, Sami Habib, **Zishan H. Khan**, Esam Alarfaj and Shamshad A. Khan  
J. Nanomater. (2012) doi: 1155/2012/393084
33. *Multi-walled carbon nanotubes film sensor for carbon mono-oxide gas.*  
**Zishan H. Khan**, Numan Salah, Sami S. Habib, A. Azam and M.S. Al-Shahawi  
Current Nanoscience 8 (2012) 274.

34. *Glass Transition Kinetics of a- $Se_xTe_{100-x}$  nanoparticles.*  
**Zishan H. Khan**  
Sci. Adv. Mater. 4 (2012) 1.
35. *Electrical transport in cobalt catalyzed multi-wall carbon nanotubes.*  
A.A. Al-Ghamdi, Shamshad A. Khan & **Zishan H. Khan**  
Adv. Sci. Letts.16 (2012) 377.
36. *Electrical and Optical properties of a- $Se_xTe_{100-x}$  thin films*  
**Zishan H. Khan**, Shamshad A. Khan , Numan Salah, Sami Habib and  
A. A. Al-Ghamdi  
Optics & Laser Tech. 44 (2012) 6-11.
37. *Chalcogenide Glasses by Differential Scanning Calorimeter (DSC).*  
**Zishan H. Khan**, N. Salah, Sami Habib & S. A. Khan  
Chalcogenide Letts. 8 (2011) 615.
38. *Cobalt catalyzed multi-walled carbon nanotubes film sensor for carbon mono-oxide gas.*  
**Zishan H. Khan**, M. Shahnawaze Ansari, Numan Salah, Sami S. Habib and M.S. Al-Shahawi  
Digest Journal of Nanomaterials and Biostructures6 (4) (2011) 1947.
39. *Non-Isothermal Crystallization in Amorphous  $Ga_xSe_{100-x}$  Nanorods.*  
**Zishan H. Khan**  
Jap. J. Appl. Phys. 50 (2011) 105603.
40. *High-energy ball milling technique for ZnO nanoparticles as antibacterial material.*  
Numan Salah, Sami S Habib, **Zishan H Khan**, Adnan Memic, Ameer Azam,  
EsamAlarfaj, NabeelZahed and Salim Al-Hamedi  
International Journal of Nanomedicine 6 (2011) 863–869.
41. *Thermoluminescence and photoluminescence of  $ZrO_2$  nanoparticles*  
Numan Salah, Sami S. Habib, **Zishan H. Khan**, FathiDjouider  
Radiation Physics and Chemistry 80 (2011) 923–928.
42. *Optical Studies on amorphous ZnO film.*  
Ravi Keshwar Kumar, M. Husain and **Zishan H. Khan**  
Digest Journal of Nanomaterials and Biostructures 6 (2011) p.1317.
43. *Morphology and optical properties of thin films of a- $Ga_xSe_{100-x}$  nanoparticles.*  
**Zishan H. Khan**, A. A. Al-Ghamdi, Shamshad A. Khan, Sami Habib & Numan Salah  
Nanoscience & Nanotechnology Letters 3 (2011) 1-5
44. *Electrical properties of thin films of a- $Ga_xTe_{100-x}$  composed of nanoparticles.*  
**Zishan H. Khan**, Shamshad A. Khan, Numan Salah, A. A. Al-Ghamdi &  
Sami Habib

- Phil. Mag. Letters 93(7) (2011) 207-213.
45. *Nanoparticles of Al<sub>2</sub>O<sub>3</sub>:Cr as a sensitive thermoluminescent material for high exposures of gamma rays irradiations.*  
**Numan Salah, Zishan H Khan, Sami S Habib**  
 Nuclear Instruments and Methods in Physics Research B 269 (2011) 401-404.
  46. *Electrical Transport of  $\alpha$ -Se<sub>87</sub>Te<sub>13</sub>Nanorods.*  
**Zishan Husain Khan**, Numan Salah and Sami S. Habib  
 Journal of Experimental Nanoscience 6 (2011) 337.
  47. *Quantum Effect on the Energy Levels of Eu<sup>2+</sup> Doped K<sub>2</sub>Ca<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> Nanoparticles.*  
 Numan Salah, Sami S Habib, Zishan H Khan  
 Journal of Fluorescence 20 (2010) 1009–1015.
  48. *Effect of composition on electrical and optical properties of thin films of amorphous Ga<sub>x</sub>Se<sub>100-x</sub>nanorods.*  
**Zishan H. Khan**, Shamshad A. Khan, Numan Salah, Sami Habib, S. M. Abdallah El-Hamidy, A. A. Al-Ghamdi  
 Nanoscale Res. Letters 5 (2010) 1512.
  49. *Electrical and Optical Characterization of ZnO nanocrystalline film.*  
**Zishan H. Khan**, Islamuddin, Numan Salah, Sami Habib, S. M. Abdallah El-Hamidy, M. Rafat and M. Husain  
 International Journal of Nanoscience 9(5) (2010) 423.
  50. *The nanoparticles of BaSO<sub>4</sub>:Eu as detectors for high doses of different ionizing radiations*  
 Numan Salah, Sami S. Habib and **Zishan H. Khan**  
 Atoms for Peace – An International Journal, 3 (2010) 84-92.
  51. *Structural, optical and electrical properties of cadmium doped lead chalcogenide (PbSe) thin films.*  
 Shamshad A. Khan, **Zishan H. Khan**, A. Sibae, A. A. Al-Ghamdi  
 Physica B 405 (2010) 3384.
  52. *Variable range hopping in carbon nanotubes.*  
**Zishan H. Khan**, S. Khan and M. Husain  
 Current Nanoscience 6 (2010) 1-16.
  53. *Electrical and Optical Properties of thin film of  $\alpha$ -Se<sub>70</sub>Te<sub>30</sub>Nanorods.*  
**Zishan H. Khan** & M. Husain  
 Journal of Alloy and Compound (2009) 486 (2009) 774–779.
  54. *Electrical and Optical properties of amorphous silicon nanoparticles.*  
**Zishan H. Khan**  
 Applied Surface Science 255 (2009) 8874–8878.

55. *Functionalization of gold and carbon nanostructured materials using gamma ray irradiation*  
Numan Salah, Sami Habib, **Zishan H. Khan**, Salim Al-Hamdi and FathiDjouider  
Radiation Physics and Chemistry 78 (2009) 910.
56. *Electrical Transport Properties of Ni<sub>95</sub>Ti<sub>5</sub> Catalyzed Multi wall Carbon Nanotubes Film.*  
**Zishan H. Khan**, Numan A. Salah and Sami S. Habib  
*Journal of Nanomaterials (USA)*(2009) doi;10.1155/2009/459867
57. *Nanoparticles of BaSO<sub>4</sub>:Eu for Heavy Dose Measurements.*  
Numan A. Salah, Sami Habib, **Zishan H. Khan** and S. P. Lochab  
Journal of Luminescence 129 (2009) 192-196.
58. *Optical properties of Silicon nanoparticles synthesized at different heating rates via physical vapour condensation method*  
**Zishan H. Khan**, Numan A. Salah and Sami S. Habib  
Int. J. Nanoparticles (UK) 2(1-6) (2009) 380-387.
59. *Studies on ZnO nanorods*  
KarunapatiTripathi, M.Husain, Numan A. Salah, Sami S. Habib, Salim Al-Hamedi, NabeelZakiZahid and **Zishan H. Khan**  
Int. J. Nanoparticles (UK) 2(1-6) (2009) 148-155.
60. *Synthesis and Characterization of ZnO nanoparticles*  
KarunapatiTripathi, M.Husain, Islam Uddin, Sami S. Habib, **Zishan H. Khan**  
Int. J. Nanoparticles (UK) 2(1-6) (2009) 129-137.
61. *Electrical Transport Properties of ZnO nanostructures*  
Islam Uddin, KarunapatiTripathi, M.Husain, Shamshad A. Khan, S. M. Abdullah EL\_ Hamidy and **Zishan H. Khan**  
Int. J. Nanoparticles (UK) 2(1-6) (2009) 81-88.
62. *Electrical Transport in Nicatalyzed multi-wall carbon nanotubes*  
**Zishan H. Khan**, Numan A. Salah and Sami S. Habib  
Int. J. Nanoparticles (UK) 2(1-6) (2009) 138-147.
63. *J-E characteristics of Ni-catalyzed multiwalled carbon nanotubes*  
**Zishan H. Khan**, Sami Habib, Numan Salah, Shamshad A. Khan, Samina Khan and M. Husain  
Int. J. Nano-Biomaterials (UK) 2(1-5) (2009) 226-233.
64. *I-V Characteristics of Multi-walled Carbon Nanotubes synthesized using ECR-CVD*  
KarunapatiTripathi, **Zishan H. Khan**, M. Husain and M. Zulfequar  
Int. J. Nanoparticles (UK) 2(1-6) (2009) 58-65.

65. *Synthesis and Characterization of Sea Urchin like Nanostructures of ZnO on Si (100)*  
KarunapatiTripathi, **Zishan H. Khan**, M. Zulfequar and M. Husain  
Int. J. Nanoparticles (UK) 2(1-6) (2009) 111-118.
66. *Characterization of amorphous Se<sub>97</sub>Te<sub>3</sub> nanoparticles prepared by ball milling*  
J. K. Lal, Shamshad A. Khan, **Zishan H. Khan**, A. A. Al-Ghamdi  
Int. J. Nano-manufacturing 2(1-5) (2009)208-218.
67. *Synthesis and Characterization of Tin Dioxide Nanoparticles and effect of annealing temperature.*  
Sami S Habib, Numan Salah, **Zishan H Khan**, S. Al- Heniti, F S Al-Hazmi,  
Shamshad A Khan and Adel S Faidah  
Int. J. Nanoparticles (UK) 2(1-6) (2009) 263-269.
68. *Optical Properties of LiF:Mg,Cu,P Nanorods.*  
Numan A. Salah, **Zishan H. Khan**, Sami Habib and Ahmed Al-Ghamdi  
Int. J. Nano and Biomaterials 2(1-5) (2009) 118-125.
69. *Copper activated LiFnanorods as TLD material for high exposures of gamma-rays.*  
Numan Salah, **Zishan H. Khan**, Sami S. Habib  
Nuclear Instr. & Methods in Phys. Res. B 267(21–22) (2009) 3562–3565.
70. *Nanorods of LiF:Mg,Cu,P as detectors for Mixed Field Radiations*  
Numan Salah, Sami Habib, **Zishan H. Khan**, S.P. Lochab, D. Kanjilal,  
RanjuRanjann, V.E. Aleynikov and A.A. Rupasov  
IEEE Transactions on Nanotechnology (USA) 7(6) (2008) 749.
71. *Optical Characterization of vacuum evaporated a-Se<sub>80</sub>Te<sub>20-x</sub>Cu<sub>x</sub>thin films.*  
Anis Ahmad, S. A. Khan, Kirti Sinha, Lokesh Kumar,, **Zishan H. Khan**, M.  
Zulfeqaur and M. Husain  
Vacuum (USA) 82(6) (2008) 608-612.
72. *Electrical Transport via Variable Range Hopping in Individual Multi-wall Carbon Nanotube*  
**Zishan Husain Khan**, M. Husain, Numan Salah and SamiHabib  
J. Phys. C (UK) 20 (2008) 475207.
73. *Variable range hopping in Fe<sub>70</sub>Pt<sub>30</sub> catalyst multiwalled carbon nanotubes.*  
European Physical Journal B 60(3) (2007) 319-324.  
Monika Aggarwal, M.Husain,Samina Khan and **Zishan H. Khan**
74. *Field emission properties of Fe<sub>70</sub>Pt<sub>30</sub>catalysedmultiwalled carbon nanotubes.*  
Journal of Experimental Nano-science 3(2) (2007) 215-228.  
Samina Khan, K. N. Tripathi M. Husain, and**Zishan H. Khan**

75. *Kinetics Study of  $a\text{-Se}_{80}\text{Te}_{20-x}\text{Pb}_x$  using non-isothermal crystallization.*  
S. A. Khan, **Zishan H. Khan**, M. Zulfeqaur and M. Husain  
Physica B (The Netherlands) **400** (2007) 180-184.
76. *Synthesis of Carbon nanotubes using  $\text{Ni}_{95}\text{T}_{5}$  in anocrystalline film as a catalyst.*  
Samina Khan, **Zishan H. Khan**, K. N. Tripathi and M. Husain,  
J. Nanoscience & Nanotechnology **7** 1 (2007).
77. *Electrical conduction mechanism in  $\text{Fe}_{70}\text{Pd}_{30}$  catalyzed multi-wall carbon nanotubes.*  
Monika Aggarwal, M. Husain, Samina Khan and **Zishan H. Khan**  
J. Nano-particle Research **5** 6 (2007).
78. *Electrical Transport Properties of an Individual disordered multiwalled nanotube.*  
Meng-Yen Tsai, Chung-Yi Yu, Chien-Hsin Yang, Nyan-Hw Tai, Tsong-Pyng Perng,  
Chien-Ming Tu, **Zishan H. Khan**, Yang-Chung Lio and Cheng Chung Chi  
Appl. Phys. Letts **89** 192115 (2006).
79. *Nanodiamond : Synthesis , Transport Property, Field Emission and applications.*  
**Zishan H. Khan** and M. Husain  
Materials Science Research India **03 (1a)** 1-22 (2006).
80. *Characterization of Carbon nanotubes grown on  $\text{Fe}_{70}\text{Pd}_{30}$  films.*  
**Zishan H. Khan**, Samina Khan, T. P. Perng and M. Husain  
PHYSICA B **373(2)** 317 (2006).
81. *Differential Scanning Calorimetric Study of  $a\text{-Se}_{80}\text{Te}_{20-x}\text{Cu}_x$  chalcogenide glasses.*  
A. Ahmad, S. A. Khan, K. Sinha, **Zishan H. Khan**, M. Zulfeqaur and M. Husain  
Physica B (The Netherlands) **382** (2006) 92-97.
82. *Studies on thin films of lead chalcogenides.*  
Sushil Kumar, **Zishan H. Khan**, M. A. Majeed Khan and M. Husain  
Current Appl. Phys. (Japan) **5** (2005) 561.
83. *Carbon nanotube and its possible applications.*  
**Zishan H. Khan** and M. Husain  
Indian J. Mat. Sci. and Engg. (CSIR, New Delhi), 12 529-551 (2005).
84. *Effect of Annealing on the optical band gap of  $\text{Ga}_5\text{Se}_{90-x}\text{Sb}_x$  during crystallization.*  
S. A. Khan, M. Zulfeqaur, **Zishan H. Khan** and M. Husain  
Journal of Modern Optics (UK) **50** (2003) 51-62.
85. *Optical and Electrical Properties of Glassy  $\text{Ga}_{10}\text{Te}_{90-x}\text{Sb}_x$ .*  
S. A. Khan, M. Zulfeqaur, M. Ilyas, **Zishan H. Khan** and M. Husain  
Optical materials, (USA) **20** (2002) 189-196.
86. *Electrical and Thermal Properties of  $a\text{-(Se}_{70}\text{Te}_{30})_{100-x}(\text{Se}_{98}\text{Bi}_2)_x$  Thin Films.*  
**Zishan H. Khan**, Kh. Selima Begum, M. Zulfeqaur, M. Ilyas and M. Husain  
Current Applied Physics (Japan) **2 (2)** (2002) 167-174.

87. *Electrical Conductivity and Thermo-electric Power in  $a\text{-Se}_{80-x}\text{In}_x$  &  $a\text{-Se}_{80-x}\text{Ge}_{20}\text{Te}_x$  Thin Films.*  
**Zishan H. Khan**, A. Kumar, M. Zulfeqaur, M. Ilyas and M. Husain  
 Canadian J. Phys. **80** (2002) 19-27.
88. *Electrical Conductivity and Thermo-electric Power of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Te}_x$  Thin Films.*  
**Zishan H. Khan**, M. Zulfeqaur, M. Ilyas and M. Husain,  
 Acta Physica Polonica (A) **98** (2000) 93-102.
89. *Dielectric Properties of  $a\text{-Ga}_x\text{Se}_{100-x}$  alloys.*  
 M. Ilyas, M. Zulfeqaur, **Zishan H. Khan** and M. Husain.  
 Physica B, (The Netherland) 254 (1998) 57-68.
90. *Optical band gap and optical constants in  $a\text{-Ga}_x\text{Te}_{100-x}$  thin films.*  
 M. Ilyas, M. Zulfeqaur, **Zishan H. Khan** and M. Husain.  
 Optical Materials (USA) 11 (1998) 67-77.
91.  *$a\text{-Ga}_{20}\text{Se}_{80-x}$ : A Material for Photovoltaic Applications.*  
 M. Husain, **Zishan H. Khan** and P. K. Bhatnagar  
 Solar Energy Materials and Solar Cell 55 (USA) (1998) 11-14.
92. *Effect on Sb on Transport Properties of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Sb}_x$  Thin Films.*  
**Zishan H. Khan**, M. Zulfeqaur, M. Manzar Malik and M. Husain  
 Jap. J. Applied Physics (Japan) 37 (1998) 23-28.
93. *Optical Properties of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Te}_x$  Thin Films.*  
**Zishan H. Khan**, M. Zulfeqaur & M. Husain  
 J. Optics (U.K.) 28 (1997) 151-157.
94. *Electrical Transport Properties of Thin Films of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Bi}_x$ .*  
**Zishan H. Khan**, M. Zulfeqaur, M. Manzar Malik & M. Husain  
 Materials Science & Technology (U.K.) 13 No. 6 484-489 (1997)
95. *Optical Properties of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Bi}_x$  Thin Films.*  
 J. Modern Optics (U.K.) 44 55-68 (1997)  
**Zishan H. Khan**, M. Zulfeqaur & M. Husain
96. *Optical Properties of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Sb}_x$  Thin Films.*  
**Zishan H. Khan**, M. Zulfeqaur, T. P. Sharma & M. Husain  
 Optical Materials (USA) 6 139 (1996).
97. *Electrical Transport Properties of Glassy Semiconducting  $\text{Se}_{70-x}\text{Ga}_{30}\text{Te}_x$ .*  
 M. Manzar Malik, **Zishan H. Khan** & M. Husain  
 Mat. Sci. Forum (Switzerland) 223-224 275 (1996).

98. *Optical Properties of a-Se<sub>85-x</sub>Ga<sub>15</sub>Bi<sub>x</sub> Thin Films.*  
**Zishan H. Khan**, M. Ilyas & M. Husain  
 Mat. Sci. Forum (Switzerland) 223-224 165 (1996)
99. *Electrical Conduction Mechanism in a-Se<sub>80-x</sub>Ga<sub>20</sub>Te<sub>x</sub> Films.*  
 J. Physics; Condensed Matter (U.K.) 7 8979-91 (1995)  
**Zishan H. Khan**, M. Manzar Malik, M. Zulfequar & M. Husain
100. *Characterization of carbon nanotube grown on Fe<sub>70</sub>Pd<sub>30</sub> film*  
**Zishan H. Khan**, SS Islam, SC Kung, TP Perng, S Khan, KN Tripathi. M Agarwal  
 PHYSICA B (Netherland) **373(2)** 317 (2006).
101. *Ga<sub>40</sub>Se<sub>60</sub>: A Material for photovoltaic application*  
 M Husain, **Zishan H. Khan**, PK Bhatnagar  
 Solar energy material and solar cells 55(1),11-14 (1998).

#### **Papers Presented In Workshops/Conferences;**

1. *Electrospun polyacrylonitrile nanofibers based immunosensor for the detection of Vibrio cholera*, 3rd International Conference on Nanostructured Materials and Nanocomposites, Hindustan College of Science and Technology, Farah (Mathura), 12-14 Dec 2015
2. *Effect of Te incorporation on structural and optical properties of ZnO Nanostructured film*, 15<sup>th</sup> International Workshop on Physics of Semiconductor Devices (IWPSD-2015), IISc Bangalore (7-10 December, 2015)
3. *Perovskite sensitized solar cell using solid polymer electrolyte*, International Conference on Functional Materials and Devices, University of Malaya, Kuala Lumpur, Malaysia (Aug. 04 – 06, 2015).
4. *CH<sub>3</sub>CH<sub>2</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite: A promising semiconducting material for solar cell*, International Photovoltaic Solar Energy Conference-Solar Asia-2015, Deptt. of Physics, S B P Pune University, Pune , India
5. *Synthesis and Characterization of CH<sub>3</sub>CH<sub>2</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite and its photovoltaic Performance*, National Conference on Nanodevices, Hindustan Colg. Of Sc. & Tech., Mathura, India
6. *Electrodeposited porous ZnO films exhibiting enhanced performance in biosensors*, International Conference on Recent Advances in Nanoscience and Nanotechnology, Sathyabama University, Chennai(8-10 July 2015)
7. *Optimization of Tellurium Thin Film using Electrochemical Technique for Biosensor*, International Conference on Recent Advances in Nanoscience and Nanotechnology, JNU, New Delhi (15-16 Dec 2014)

8. *Synthesis and Characterization of a-GaTe Nanoparticles.*, Recent trends in National Conference on Advanced Trends in Nanoscience and Nanotechnology (ATNN-2013), Jamia Millia Islamia, New Delhi-110025 (India).
9. *Electrical Transport in Nicatalyzed multi-wall carbon nanotubes.* International Conference of Nanotechnology (ICON008) organized by Center of Nanotechnology, King Abdul Aziz University, Jeddah, Saudi Arabia, (June17-19, 2008).
10. *Growth of Fe-Pt catalysed MWNTs; A Potential Material for Hydrogen Storage*, Samina Khan, Zishan H. Khan and M. Husain, International Materials Research Congress (Aug. 19-25, 2006), CACUN, MEXICO
11. *Synthesis of Carbon nanotubes using Ni nano-crystalline film as a catalyst*, Samina Khan, Zishan H. Khan and M. Husain, International conference on Nano-science and Technology (March 16-18, 2006)
12. *Study of multi-walled carbon nanotubes growth on Fe-nano-crystalline film*, Samina Khan, Monica Aggarwal, Zishan H. Khan and M. Husain, Proceedings of XIII International workshop on Physics of Semiconductor Devices Vol. 1 (Dec. 13-17, 2005).
13. *Electrical properties of individual carbon nanotubes*, C-MTu, Zishan H. Khan, M-Y Tsai, T. P. Perng and C. C. Chi, Chinese Annual Meeting of Physics, National Sun Yat-Son University, Kaoshiung, Taiwan, ROC (Feb. 01-03, 2005).
14. *Synthesis of carbon nanotubes on Fe-Pt film*, Zishan H. Khan, M. Zulfequar and M. Husain, International workshop on Physics of Semiconductor Devices, National Physical, Laboratory, New Delhi (Dec. 14-19, 2005)
15. *Characterization of carbon nanotubes grown on Fe-Pd films*, Zishan H. Khan and M. Husain, EMSI conference on microscopy, NPL, Delhi (2004).
16. *I-V characteristics of individual multi-walled carbon nanotube.*, Zishan H. Khan, Tsai M. Y., Tai T. H., Ming T. C., Chi C. C. and Perng T. P., International conference on Materials Science (IUMRS), Taiwan (Nov.12-16, 2004).
17. *Effect of ECR plasma exposure on optical constants of  $Se_{80}Te_{20-x}Pb_x$  thin films.*, M. Husain, L. Seventh Star Singh, K. P. Tiwary, Shamshad A. Khan, Zishan H. Khan and Z. H. Zaidi, Taiwan International Conference on Nanoscience and Technology (Taiwan), June 30 – July 03, 2004.
- 20 *Novel Catalysts used for the synthesis of carbon nanotubes*, Eight International Conference on New Diamond Science & Technology, University of Melbourne, Australia (2002).

21. *Electrical Properties of  $a-(\text{Se}_{70}\text{Te}_{30})_{100-x}(\text{Se}_{98}\text{Bi}_2)_x$  Alloys*, The Sixth Asian Thermophysical Properties Conference (ATPC'2000), Guwahati (Assam) India (Oct. 08-11, 2001).
22. *Transient Photoconductivity Measurements in  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Te}_x$  Thin Films*. International Conference on Advance Materials, held at Chaudhary Charan Singh University, Meerut (Dec. 26-28, 2000).
23. *Optical Properties of Glassy  $\text{Ga}_{10}\text{Te}_{90-x}\text{Sb}_x$  Alloys*., National Conference on Materials and Semiconductor Technologies in Electronic Research, held at G.B. Pant University of Agriculture & Technology, Pantnagar (Nov. 08-10, 2000).
24. *Crystallization Kinetics in  $a\text{-Se}_{100-x}\text{Bi}_x$  Alloys*., International Workshop on Physics of Semiconductors Devices, held at New Delhi (Dec. 14-18, 1999).
25. *Crystallization Kinetics in  $a-(\text{Se}_{70}\text{Te}_{30})_{100-x}(\text{Se}_{98}\text{Bi}_2)_x$  Alloys*., National Seminar on Physics of Materials for Electronic and Opto-electronic Devices (Jai Narayan Viyas University, Jodhpur, March 08-10, 1999).
26. *Electrical and Dielectric Studies of  $a\text{-Ga}_x\text{Te}_{100-x}$  Alloys*., Regional Workshop on Characterization of Semiconductor Nanostructures and their applications to Opto-electronic Devices (University of Delhi, South Campus, Dec. 01-04, 1998).
27. (i) *Compositional dependence optical studies of  $a\text{-Se-Ga-Sb}$  thin films*.
28. (ii) *Thermal Studies of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Te}_x$  Thin Film*., International Workshop on Physics of Semiconductors Devices, held at New Delhi (Dec. 16-21, 1997).
29. *X-ray K-absorption edge of Glassy Semiconducting  $\text{Ga-Se}$  Alloys*. VIth National Seminar on X-ray Spectroscopy and allied Areas, Govt. P.G. Arts and Science College, Ratlam (MP) (Nov. 17-19, 1997).
30. *Electrical Conductivity and Thermo-electric Power in  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Te}_x$  Thin Films*. International Conference on the Physics of Disordered Materials, Department of Physics, University of Rajasthan, Jaipur, Jan. 27 - 29, 1997.
31. *Optical Properties of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Te}_x$  Thin Films*. 3rd International Conference and Intensive Tutorial Course on Semiconductor Materials & Technology, Department of Electronic Sciences, South Campus, University of Delhi, Delhi, Dec. 19-21, 1996.
32. (i) *Optical Properties of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Bi}_x$  Semiconducting thin films*.
33. (ii) *Electrical Transport Properties of Glassy Semiconducting  $a\text{-Se}_{80-x}\text{Ge}_{30}\text{In}_x$* . International Seminar on Current Developments in Disordered Materials, Kurukshetra University, Kurukshetra, Jan. 22-24, 1996..
34. *Electrical Transport Properties of  $a\text{-Se}_{80-x}\text{Ga}_{20}\text{Sb}_x$  Thin Films*.

Vith International Workshp on Physics of Semiconductor Devices, NPL, New Delhi, Dec. 11-16, 1995.

35. *Electrical Transport Properties of thin films of a- $Se_{80-x}Ga_{20}Bi_x$ .*

National Seminar on Disordered Materials, University of Rajasthan, Jaipur, Oct. 24-26, 1994

36. *Chemical Shift of the X-ray K-absorption edge of glassy semiconducting GeSe.*

Proceedings of Saha Centenary International Symposium on Spectroscopy and Astrophysics, p.193, 1993