

# CURRICULUM VITAE

**NAME:** *Naeem Ahmad*

**SEX:** *Male*

**DATE A OF BIRTH:** *4<sup>th</sup> April. 1980*

**NATIONALITY:** *Pakistan*

**TEL:** *92-51-9019714*

**FAX:** *86-10-82649485*

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**CURRENT STATUS:** *Assistant Professor (TTS)*

**DATE OF JOINING:** *June 2011-Till continued*

**PRESENT ADDRESS:** *Spintronics Laboratory, Department of Physics, Faculty of Basic and Applied Sciences .International Islamic University, Islamabad 44000, Pakistan*



## 1. EDUCATION

- (1) 2007-2011: Ph. D (Condensed matter Physics).  
Institute of Physics, Chinese Academy of Sciences (CAS), Beijing, China,  
Advisor: Prof. Xiufeng Han
- (2) 2003- 2007: MSc, Mphil (Laser Induced Plasma)  
University of Engineering and Technology, Lahore, Pakistan

## 2. EXPERIMENTAL SKILLS

- (1) Thin film deposition using DC/ RF magnetron sputtering system;
- (2) Micro/nano fabrication including optical (UV) lithography, electron-beam lithography (EBL), focused ion beam (FIB), ion-beam etching (IBE), reactive ion etching (RIE) and so on;
- (3) Structure/surface characterization using XRD, SEM, FMR, AFM, MFM and MOKE;
- (4) An Extensive Experience in fabrication of ferromagnetic nanowires and nanotubes by electrodeposition method
- (5) Magnetic characterization by VSM, SQUID magnetometer and Spin-dependent transport analysis by PPMS
- (6) Fluent in Labview and Origin scientific computing and numerical analysis software.
- (7) Simulation of M-H curves by Object Oriented Micromagnetic Framework (OOMMF)

## 3. RESEARCH INTERESTS

- (1) Design, fabrication and application of magnetic nanostructures, including giant magnetoresistance (GMR), magnetic tunnel junctions (MTJs) and other spintronic materials;
- (2) Spin-polarized transport in magnetic nanostructures;
- (3) Design and fabrication of magnetic random access memory, magnetic sensors and other spintronics devices based magnetic nanostructures.
- (4) Magnetization Reversal mechanism in ferromagnetic nanowires and nanotubes
- (5) Magnetization reversal mechanism study to use in high density recording media

## 4. AWARDS

- (1) Publication Editor, Journal of Applied Physics, for Conference proceedings of the 56th Annual Conference on Magnetism and Magnetic Materials, Arizona USA (2011).
- (2) Overseas Scholarship 2007-2011 for PhD by Higher Education Commission, Pakistan.
- (3) 1<sup>ST</sup> Position in 2003-2005 in Master of Science, University of Engineering and Technology, Lahore, Pakistan.

- (4) 1st Position in 1996 in Metric Govt. High School, Arifwala, Pakpattan
- (5) Principal Investigator of the Project "Fabrication and characterization of innovative nanomaterials" funded by Higher Education Commission, Pakistan
- (6) Win highly competitive Travel Grants five times to participate in research conferences in countries like USA, Turkey and China

## 5. Research Projects

**1-Funding Agency :** Higher Education Commission of Pakistan

**Project Number** = No: PM-IPFP/HRD/HEC/2011/354

**Title** = Fabrication, Characterization & FMR study of ferromagnetic nanowires & nanotubes.

**Role** = Principle Investigator

**Project Funding** = 0.5 million PRPs

**2-Funding Agency:** Higher Education Commission of Pakistan

**Project Number** = 20-4861

**Title** = Synthesis and characterization of Graphene based nanocomposites

**Role** = Co PI

**Project Funding** = 14million PRPs

## 6. PUBLICATION LIST (Cumulative Impact Factor >33)

- 1-** Magnetoelastic anisotropy induced effects on field and temperature dependent magnetization reversal of Ni nanowires and nanotubes.  
**Naeem Ahmad**, J. Y. Chen, W. P. Zhou, D P Liu, X F Han,\* Journal of Superconductivity and Novel Magnetism **24**, 785-792 (2011).
- 2-** Temperature dependent magnetic properties of Co nanowires and nanotubes fabricated by electrodeposition method. Journal of Applied Physics **109**, 07A331 (2011).  
**Naeem Ahmad**, J.Y. Chen, Javed Iqbal, W. X. Wang, W. P. Zhou, and X. F. Han\*
- 3-** Room-temperature spin glass and near band edge (NBE) properties of highly disorder (FeCo)<sub>0.03</sub>Zn<sub>0.97</sub>O and (FeCoNi)<sub>0.03</sub>Zn<sub>0.97</sub>O nanorods" Journal of Applied Physics **107**, 043902 (2010).  
Javed Iqbal, Xiaofang Liu, **Naeem Ahmad** , Takashi Harumoto, Dapeng Yu, Ronghai Yu.
- 4-** Effect of external magnetic field on magnetic properties of Co-Pt nanotubes and nanowires.  
Journal of Applied Physics **109**, 07E157 (2011).  
Jun-Yang Chen, Hai-Rui Liu, **Naeem Ahmad**, Y. L. Li, W. P. Zhou and Xiu-Feng Han\*
- 5-** Synthesis and magnetic characterization of Co-NiO-Ni core-shell nanotube arrays  
J.Y. Chen, **Naeem Ahmad**, D.W. Shi, W. P. Zhou, and Xiu-Feng Han\*  
Journal of Applied Physics **110**, 073912 (2011).
- 6-** Magnetization and magnetic anisotropy of Co/Cu Multilayer Nanowires  
**Naeem Ahmad**, J. Y. Chen, D. W. Shi, Javed Iqbal, X. F. Han,\*  
Journal of Applied Physics, **111**, 07C119 (2012).
- 7-** Synthesis and Characterization of Silver Doped Cadmium Oxide Nanoparticles  
Abdul Majid, Zeba Afzal, Shehzad Murtaza, Ghulam nabi and **Naeem Ahmad**

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Journal of Advanced Physics, **02**, 1-3 (2013).

- 8-** Fabrication and magnetic properties of La-X (X = Co, Ni, and Fe) nanotube  
J. Y. Chen, D. W. Shi, **N. Ahmad**, D. P. Liu, W. P. Zhou and X.F. Han Journal of Applied Physics **114**, 054303 (2013)
- 9-** Synthesis, raman and optical properties of Cu doped ZnO nanorods prepared at low temperature.  
Javed Iqbal, Tariq Jan, M. Shafiq, Aqsa Arshad, **Naeem Ahmad**, Saeed Badshah, Ronghai Yu\*  
Ceramics International 40,2091(2013)
- 10-** Influence of Mg doping level on morphology, optical, electrical properties and antibacterial activity of Zn O nanostructures  
Javed Iqbal, Tariq Jan, Muhammad Ismail, **Naeem Ahmad**, Asim Arif, Mohsin Khan, M. Adil, Sami-ul-Haq, Aqsa Arshad  
Ceramics International, 40,7487 (2014)
- 11-** Carbon Ion-beam-induced Modification in Structural and Electrical Properties of ZnO Nanowires  
Javed Iqbal, H. Tabassum, Ishaq Ahmad, Tariq Jan, C.F. Dee, M.Madhuku, A.A. Umar & **N. Ahmad**  
Sans Malaysiana, **43**, 283 (2014)
- 12-** Ion Irradiation effects and magnetization reversal mechanism in  $(\text{Ni}_{80}\text{Fe}_{20})_{1-x}\text{Co}_x$  nanowires and nanotubes  
**Naeem Ahmad**, J. Iqbal, J. Y. Chen, Asim Hussain, D.W. Shi, X. F. Han  
Journal of Magnetism and Magnetic Materials, **378**, 546 (2015)
- 13-** AC Potential Dependent Concentration Variation and Domain Wall Pinning in  $\text{Co}_{1-x}\text{Zn}_x$  (X=0.4-0.5) Nanorods  
**Naeem Ahmad**, Amna Jaral, Gulbahar Bano, Sidrah Batool, Hira Dilpazir, Muhammad Jameel, Muhammad Suleman, Javed Iqbal, Abdul Majid, M. Moazzam Naseer, Saqlain A. Shah  
Journal of Superconductivity and Novel Magnetism, **29**, 509 (2016)
- 14-** First order Raman scattering analysis of transition metal ions implanted GaN  
Abdul Majid, Usman Ali Rana, Abdul Shakoor, **Naeem Ahmad**, Najam al Hassan, Salah Ud-Din Khan Journal of Physics and Chemistry of Solids 90 (2016) 35–39
- 15-** Doxorubicin-loaded photosensitive magnetic liposomes for multi-modal cancer therapy  
Saqlain A. Shah , M.U. Aslam Khan , M. Arshad, S.U. Awan , M.U. Hashmi, **N. Ahmad**  
Colloids and Surfaces B: Biointerfaces **148** (2016) 157–164
- 16-** Magnetization reversal and surface spins in electrodeposited  $\text{Co}_{90}\text{Mn}_{10}$  alloy nanowires  
**Naeem Ahmad**, Sajid Tanweer , Suleman Khan, J. Iqbal, Abdul Majid, Saqlain Shah, M.S. Awan, Muhammad Moazzam Naseer  
Journal of Superconductivity and Novel Magnetism (2016), DOI:10.1007/s10948/016-3704-y
- 17-** Ferromagnetic Relaxation and Magnetic properties of  $\text{Co}_{40}\text{Fe}_{40}\text{B}_{20}$  thin Films  
**Naeem Ahmad**, Tian YU, Suleman Khan, Abdul Majid, Javed Iqbal, S.A. Shah, S.U. Awan, X. F.Han

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Journal of Superconductivity and Novel Magnetism (2016), DOI: 10.1007/s10948/016-3730-9

- 18-** Influence of voltage variation on structure and magnetic properties of Co<sub>1-x</sub>Sn<sub>x</sub>(X=0.3-0.7) Nanowire Alloys in Alumina by electrochemical deposition  
**Naeem Ahmad**, Suleman khan, M. Arman liaqat, Muhammad Awais, Saqlain A. Shah, Ishfaq Ahmed, Nyla Jabeen<sup>5</sup>, Abdul Majid<sup>6</sup>, Javed Iqbal<sup>7</sup>  
Submitted to Applied Physics A, MS#APYA-S-16-01831
- 19-** Magnetization reversal and magnetic anisotropy in Fe<sub>90</sub>X<sub>10</sub> (X=Pt & Pd) nanowires and nanotubes  
**Naeem Ahmad**, J. Y. Chen, D.W.Shi, Saqlain A. Shah, W.P. Zhou, X. F. Han\*  
To be Submitted Applied Physics Letter, MS# L11-03781
- 20-** Magnetization reversal and damping mechanism in electrodeposited Ni<sub>80</sub>Fe<sub>20</sub> Nanowires with different aspect ratio.  
**Naeem Ahmad**, J. Y. Chen, Sun Li, Saqlain A. Shah, X. F. Han,\*  
To be Submitted Physical Review B
- 21-** Synthesis and Characterizations of Novel Multiphase La-Ni Alloys Core-Shell Nanowires  
Da-Wei Shi, Jun-Yang Chen, **Naeem Ahmad**, Wen-Ping Zhou and Xiu-Feng Han  
Submitted to Nanoletter, MS # nl-2011-02198r
- 22-** Fabrication and magnetic properties of La<sub>x</sub>Co<sub>1-x</sub> nanotubes prepared by electrodeposition method.  
**Naeem Ahmad**, Jun-Yang Chen, Da-Wei Shi, Wen-Ping Zhou, and Xiu-Feng Han  
Submitted to Small. MS#sl-20189821.

## CONFERENCE LIST

### International Conferences

- 1-** Structural and magnetic properties of ferromagnetic Nanowires and Nanotubes  
**Naeem Ahmad (oral speaker)**, J.Y. Chen, Shamaila Shehzadi, W.P Zhou, D.P.Liu, X F Han,\*  
International Conference on Superconductivity and Magnetism April 25-30,2010  
Antalya, Turkey
- 2-** Magnetization reversal in Ni nanowires and nanotubes  
**Naeem Ahmad (Oral Speaker)**, J Y Chen, X F Han,\*  
International Conference on Magnetic Materials June 1-4,2010, Ningbo,P.R.China
- 3-** Structural and magnetic properties of ferromagnetic Ni and Co nanowires and nanotubes.  
**Naeem Ahmad (Poster Presentation)**, J Y Chen, X F Han,\*  
The 7th Pacific Rim International Conference on Advanced Materials and Processing 1-5 August  
2010 Cairns Convention Centre, Cairns, Australia.
- 4-** Magnetic characterization of ferromagnetic nanowires and nanotubes  
**Naeem Ahmad (Oral Speaker)**, J Y Chen, X F Han,\*

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In IEEE Magnetic society, Beijing Chapter July 23-26,2010 Inner Mongoliya, China.

- 5-** Magnetic Characterization of Co nanowires and nanotubes fabricated by electrodeposition method  
**Naeem Ahmad (Oral Speaker)**, J Y Chen, X F Han,\* in 55th MMM Conference Nov 14-18,2010, Atlanta, USA.
- 6-** Magnetization reversal and change of magnetic anisotropy in Co/Cu Multilayers Nanowires with crossed configuration  
**Naeem Ahmad (Oral Speaker)**, J Y Chen, D.W. Shi,J.Iqbal, X F Han,\* in 56th MMM Conference Oct 30-Nov 3,2011, Scottsdale, Arizona, USA
- 7-** Ion Irradiation effects and magnetization reversal mechanism in  $(\text{Ni}_{80}\text{Fe}_{20})_{1-x}\text{Co}_x$  nanowires and nanotubes  
**Naeem Ahmad (Oral Speaker)**,Asim Hussain, Chen Chunyang,J. Iqbal, Han Xiufeng\*  
in 12<sup>th</sup> Joint Intermag/MMM Conference January 14-18,2013, Chicago, Illinois, USA
- 8-** Magnetization reversal and magnetic anisotropy in  $\text{Fe}_{90}\text{Pt}_{10}/\text{Fe}_{90}\text{Pd}_{10}$  nanowires and nanotubes  
**Naeem Ahmad (Oral Speaker)**, Chen Chunyang, J. Iqbal, Han Xiufeng\*  
in 12<sup>th</sup> Joint Intermag/MMM Conference January 14-18,2013, Chicago, Illinois, USA
- 9-** Antiferromagnetic Order and Neel Temperature in  $\text{Co}_{1-x}\text{Mn}_x$  ( $X=0-1$ ) alloy nanostructures.  
**Naeem Ahmad (Oral Speaker)**, Javed Iqbal, J.Y. Chen, X.F. Han  
59th MMM Conference November 3-7, 2014, Honolulu, Hawaii, USA
- 10-** Ferromagnetic Damping and Two Magnon Scattering in  $\text{Co}_{40}\text{Fe}_{40}\text{B}_{20}$  thin Films  
Naeem Ahmad(**Oral Speaker**), J.Y. Chen, Javed Iqbal, Abdul Majid, Saqlain Shah, X. F. Han  
Joint MMM/Intermag Conference January 11-15, 2016,San Diego,California, USA
- 11-** Potential dependent Tuning of magnetic and structural properties of electrodeposited NiZn nanowires in  $\text{Al}_2\text{O}_3$  templates  
Naeem Ahmad (**Oral Speaker**), Saddique Ghumen, Suleman Khan, Javed Iqbal, Abdul Majid, Saqlain Shah, X. F. Han  
61st Annual Conference on Magnetism and Magnetic Materials, October 31 – November 4, 2016, New Orleans, Louisiana, USA

## Local Conferences

- 1.** Potential dependent concentration variation and Domain Wall Pinning in Ferromagnetic  $\text{Co}_{1-x}\text{Zn}_x$  ( $X=0.4-0.5$ ) Nanocylinders  
**Naeem Ahmad**, Amna Jaral, Gulbahar Bano, Sidrah Batool, Hira Dilpazir, Muhammad  
Workshop on Contemporary Topics in Nanomagnetism, Feb 23-27, 2015 National Centre for Physics, Islamabad
- 2.** Domain Wall Pinning in  $\text{Co}_{1-x}\text{Sn}_x$  ( $X=0.4-0.5$ ) Nanocylinders

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Conference on Emerging Materials and Processes (CEMP 2015), December 22-23,2015, NUST,  
Islamabad

- 3.** Magnetic interactions and Ferromagnetic relaxation in high density vertically electrodeposited Ni<sub>76</sub>Fe<sub>24</sub>  
Nanowires and Ni<sub>77</sub>Fe<sub>23</sub> Nanotubes

**Naeem Ahmad**, Ahmad Saeed, Suleman Khan

Workshop on Recent Trends in Nanomagnetism and Spintronics, September 28-30,2016, National  
Center for

Physics, Islamabad Pakistan

## REFERENCES

### **1- Prof Dr. Han Xiufeng (Supervisor)**

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Email: [xfhan@aphy.iphy.ac.cn](mailto:xfhan@aphy.iphy.ac.cn)

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### **3- Prof Dr. Dell Atkinson**

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