



## **Dr. A. L. Sharma (Curriculum Vitae)**

*Assistant Professor, Department of Physical Sciences  
Central University of Punjab, Bathinda*

*Punjab, 151 001, India*

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# EDUCATION

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	<b>Degree</b>	<b>Subject</b>	<b>University/Institution</b>	<b>Year</b>	<b>% of marks</b>	
1.	Ph.D.	Experimental Condensed Matter Physics	I.I.T. Kharagpur	2011		
2.	M.Sc.	Physics	VBS Purvanchal University	2003	71.1 %	
3.	B.Sc.	Phy,Chem,Math	VBS Purvanchal University	2001	63.6 %	
<b>4. National Level Exams</b>						
a)	CSIR (JRF)	Physics	CSIR	2006	JRF	
b)	GATE	Physics	IIT	AIR: <b>48</b>	2006	99.02 (Percentile)
c)	JEST	Physics	JNCASR	AIR: <b>166</b>	2006	94.2 (Percentile)

## **2. Research and Teaching Experience**

- *Assistant Professor at **Central University of Punjab**: From May 2013 to Present*
- *Assistant Professor at **Central University of Jharkhand**: From July 2011 to April 2013*

**Ph. D. Thesis Title:** *Ionic Conduction and Stability Improvement in Polymer Clay Nanocomposites for Device Applications*

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# RESEARCH INTEREST

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- *Experimental Condensed Matter Physics*
- *Renewable Energy Materials and Devices*
- *Nano Science and Technology*

## **Doctoral Level Courses**

*Solid State Devices; Science and Technology of Nanomaterials; Materials Characterization Techniques; Formal English*

## ***Development Training***

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- *Materials Processing of Nanocrystalline/Nanocomposite through various routes*
- *Materials Analysis/ Evaluation*

*Structural analysis: XRD*

*Vibrational Spectroscopy (FTIR)*

*Surface property analysis: LM, SEM, FESEM, HRTEM*

*Thermal analysis: DSC, DTA, TGA*

*Mechanical Analysis: AFM, DMA, UTM*

## ***Electrochemical Property analysis***

*Impedance Spectroscopy (IS), Dielectric Spectroscopy, Modulus Spectroscopy, I-V Characteristics, Transport Number Analysis etc.*

**Device Fabrication:** *Fabrication of prototype Energy Storage Conversion Devices.*

## PUBLICATIONS

### Peer Reviewed Papers

Arya A. and **Sharma, A. L.,\*** (2018). Structural, Electrical Properties and Dielectric Relaxation in Na<sup>+</sup> Ion Conducting Solid Polymer Electrolyte, *Journal of Physics: Condensed Matter* DOI: <http://iopscience.iop.org/article/10.1088/1361-648X/aab466>

Arya A. and **Sharma, A. L.,\*** (2017). Structural, Microstructural and Electrochemical Properties of Dispersed Type Polymer Nanocomposite Films, *Journal of Physics D: Applied Physics* 51 (2018) 045504 (23pp).

Arya A, Sadiq M and **Sharma, A. L.,\*** (2017). Effect of Variation of Different Nanofiller on Structural, Electrical, Dielectric and Transport Properties of Blend Polymer Nanocomposites, *Ionics*, DOI:<https://doi.org/10.1007/s11581-017-2364-7>

Arya, A. and **Sharma, A. L.,\*** (2017). Insights into the use of polyethylene oxide in energy storage/conversion devices: A critical review, *Journal of Physics D: Applied Physics*, 50 (2017) 443002 (51pp)

Arya, A. and **Sharma, A. L.,\*** (2017). Polymer electrolytes for lithium ion batteries: a critical study, *Ionics*, 23, 497-540

Agnihotri, S, Rattan S and **Sharma, A. L.,\*** (2016). Development of Novel Cathode Materials Based on MWCNT for Energy Storage/Conversion Devices, *Recent Trends in Materials and Devices*, 178, 347-355.

Sadiq M, Arya A and **Sharma, A. L.,\*** (2016). Dielectric Study of Polymer Nanocomposite Films for Energy Storage Applications, *Recent Trends in Materials and Devices*, 178, 389-396.

Sharma P K, Sharma A K, Sadiq M and **Sharma, A. L.,\*** (2016). Correlation of Microscopic Interaction with Electrical Conductivity in Polymer Separator of Energy Storage Devices, *Recent Trends in Materials and Devices*, 178, 397-406.

Sadiq M, Arya A, Yadav AK, Singh MK, Bhat, Y and **Sharma, A. L.,\*** (2016). Scheme of Polymer-Ion-clay Interaction and Ion-Ion Interaction In Polymer Nanocomposite Electrolytes Films, *Proc. of the Intl. Conf. on Nanotechnology for Better Living*, 3(1), 171.

Bhatt, C, Swaroop R and **Sharma, A. L.,\*** (2016). Structural and Electrical Properties of Polymer Nanocomposite Films, *Recent Trends in Materials and Devices*, 178, 373-387

Agnihotri, S and **Sharma, A. L.,\*** (2017). Optimization of concentration of MWCNT in terms of performance of prepared novel cathode material for energy storage, *J Integr Sci Technol*, 5(1), 23-26

Sharma P K, Sharma A K, Sadiq M and **Sharma, A. L.,\*** (2017). Effect of Nano filler on PEO based polymer electrolytes for energy storage devices applications, *Int. Res. Adv.* 4(1), 1-4.

- Arya A, Sharma S, Kumar D, Sadiq M and **Sharma, A. L.,\*** (2016). Structural and Dielectric Behavior of Blend Polymer Electrolyte based on PEO-PAN+LiPF<sub>6</sub>, *Asian Journal of Engineering and Applied Technology*. 5(1), 4-7.
- Sharma, P K, Sharma A K, Sadiq M and **Sharma, A. L.,\*** (2016). Electrical Conductivity and Ion Transport Number Analysis of Polymer Nanocomposite Films, *Asian Journal of Engineering and Applied Technology*. 5(1), 8-11.
- Arya Anil, Sharma S and **Sharma, A. L.,\*** (2016). Improved electrical properties of free standing blend polymer for renewable energy resources, *AIP Conf. Proc.* 1731: 110034-(1-3).
- Bhatt C, Swaroop R, Arya A and **Sharma, A. L.,\*** (2016). Effect of Nano-Filler on the Properties of Polymer Nanocomposite Films of PEO/PAN Complexed with NaPF<sub>6</sub>, *AIP Conf. Proc.* 1728: 020346-(1-4).
- Arya Anil, Sadiq M and **Sharma, A. L.,\*** (2016). Role of salt concentration in blend polymer for energy storage conversion devices, *AIP Conf. Proc.* 1728: 020364-(1-5).
- Sharma, P K, Sadiq M, Bhatt C and **Sharma, A. L.,\*** (2016). Correlation of ion-ion interaction with electrical conductivity in solid state polymeric separator for energy storage applications, *AIP Conf. Proc.* 1728: 020368-(1-6).
- Sangeeta, Agnihotri, S, Arya Anil and **Sharma, A. L.,\*** (2016). Improved electrochemical performance of the Cr doped cathode materials for energy storage/conversion devices, *AIP Conf. Proc.* 1728: 020380-(1-5).
- Agnihotri, S, Rattan S and **Sharma, A. L.,\*** (2016). Effect of MWCNT on prepared cathode material (Li<sub>2</sub>Mn(x)Fe(1-x)SiO<sub>4</sub>) for energy storage applications, *AIP Conf. Proc.* 1728: 020439-(1-5).
- Sadiq M, Arya A and **Sharma, A. L.,\*** (2016). Optimization of Free standing Polymer Electrolytes films for Lithium ion batteries application. *Int. Res. Adv.* 3(1), 16-20
- Arya Anil, Sharma S, Sadiq M, and **Sharma, A. L.,\*** (2016). Role of low salt concentration on electrical conductivity in blend polymeric films. *J Integr Sci Technol*, 4, 18-21.
- Arya Anil and **Sharma, A. L.,\*** (2016). Conductivity and Stability Properties of Solid Polymer Electrolyte Based on PEO-PAN + LiPF<sub>6</sub> for Energy Storage *Applied Science Letters* 2, 72-75.
- Sadiq M and **Sharma, A. L.,\*** (2016). Transport Properties of Solid Polymer Nanocomposite Films for Energy Device Applications. *Advances in Materials & Materials Processing* 15, 96-107.
- Bhatt C, Swaroop R, Arya A and **Sharma, A. L.,\*** (2015). Effect of Nano-Filler on the Properties of Polymer Nanocomposite Films of PEO/PAN Complexed with NaPF<sub>6</sub>, *Journal of Materials Science and Engineering B* 5 (11-12), 418-434.
- Sharma, A. L.,** and Thakur, A. K. (2015). Relaxation behavior in clay-reinforced polymer nanocomposites. *Ionics* 21: 1561–1575.
- Rai, Atma, Sharma, A. L., and Thakur, A. K. (2014). Evaluation of aluminium doped lanthanum ferrite based electrodes for supercapacitor design. *Solid State Ionics* 262: 230–233.

- Sharma, A. L.,** and Thakur, A. K. (2013). Transport Properties of Plastic Separator for Renewable Energy Applications. *AIP Conf. Proc.* 1536: 1125-1126.
- Sharma, A. L.,** and Thakur, A. K. (2013). High Ionic Conductivity and Desirable Stability Properties of PNC for Renewable Energy Applications. *AIP Conf. Proc.* 1512: 954-955.
- Sharma, A. L.,** and Thakur, A. K. (2013). Plastic Separators with Improved Properties for Portable Power Device Applications. *Ionics* 19: 795-809.
- Sharma, A. L.,** and Thakur, A. K. (2011). A.C. Conductivity and Relaxation Behavior in Polymer Nanocomposite. *Ionics* 17: 135-143.
- Sharma, A. L.,** and Thakur, A. K. (2011). Polymer Matrix-Clay Interaction Mediated Mechanism of Electrical Transport in Exfoliated and Intercalated Polymer Nanocomposites. *Journal of Materials Science* 46: 1916-1931.
- Sharma, A. L.,** and Thakur, A. K. (2010). Improvement in Voltage, Thermal, Mechanical stability and Ion Transport Properties in Polymer-Clay Nanocomposites. *Journal of Applied Polymer Science* 118: 2743-2753.
- Sharma, A. L.,** and Thakur, A. K. (2010). Polymer-Ion-Clay Interaction based Model for Ion Conduction in Intercalation Type Polymer Nanocomposite. *Ionics* 16: 339-350.
- Sharma, A. L.,** Shukla, N. and Thakur, A. K. (2008). Studies on Structure Property Relationship in a Polymer-Clay Nanocomposite Film Based on  $(\text{PAN})_8\text{LiClO}_4$ . *Journal of Polymer Science: Part B Polymer Physics* 46: 2577-2592.
- Sharma, A. L.,** and Thakur, A. K. (2008). Studies on Ion Association-Dissociation Effect in Polymer Nanocomposite Film Based on  $(\text{PAN})_8\text{LiCF}_3\text{SO}_3 + \text{xwt}\% \text{MMT}$ . *Solid State Ionics: New Materials for Pollution Free Energy Devices*: 675 -685.
- Sharma, A. L.,** and Thakur, A. K. (2008). Ion Transport in Intercalated Polymer Nanocomposites based on PAN. *DAE Solid State Physics Symposium* 53: 1021-1023.

## Conferences Presentation National/International

S.No.	Details
1.	<p><i>International Conference on Science and Engineering of Materials (ICSEM-2018) at Sharda University, Noida</i></p> <p><b><i>January 6-8, 2018</i></b></p> <p><b><i>M. Sadiq, Anil Arya, A. L. Sharma</i></b></p>
2.	<p>International Conference on Nanotechnology: Ideas, Innovations &amp; Initiatives-2017 (ICN:31-2017) at IIT Roorkee, Roorkee <b>December 6-8, 2017</b></p> <p><b><i>Anil Arya, A. L. Sharma</i></b></p>
3.	<p>National Conference on Solid State Ionics (NCSSI-12) at BITS Pilani, Pilani <b>December 21-23, 2017.</b></p> <p><b><i>Anil Arya, A. L. Sharma</i></b></p>
4.	<p>International Conference on Nanotechnology: Ideas, Innovations &amp; Initiatives-2017 (ICN:31-2017) at IIT Roorkee, Roorkee <b>December 6-8, 2017.</b></p> <p><b><i>Anil Arya, A. L. Sharma</i></b></p>
5.	<p>International Conference on Nanotechnology: Ideas, Innovations &amp; Initiatives-2017 (ICN:31-2017) at IIT Roorkee, Roorkee <b>December 6-8, 2017.</b></p> <p><b><i>Anil Arya, M. Sadiq and A. L. Sharma</i></b></p>
6.	<p><i>15th Asian Conference on Solid State Ionics, at Indian Institute of Technology (IIT) Patna, India during November 27 – 30, 2016.</i></p> <p><b><i>A. L. Sharma</i></b></p>
7.	<p><i>2<sup>nd</sup> India International Science Festival (IISF) held at Dec 07-11, 2016 organized by Indian Institute of Technology (IIT) New Delhi, India</i></p> <p><i>Anil Arya, Sweety Sharma and A. L. Sharma*</i></p>
8.	<p><i>3rd International Conference on Nanotechnology for Better Living, 2016 (NBL-2016), held on May 25-29, 2016, Organized by Indian Institute of Technology Kanpur (IITK), Kanpur, (UP) India and National Institute of Technology Srinagar, India.</i></p> <p><i>Anil Arya, M Sadiq, Manoj K Singh, S Sharma and A L Sharma</i></p>
9.	<p><i>3rd International Conference on Nanotechnology for Better Living, 2016 (NBL-2016), held on May 25-29, 2016, Organized by Indian Institute of Technology Kanpur (IITK), Kanpur, (UP) India and National Institute of Technology Srinagar, India.</i></p> <p><b><i>M. Sadiq, Anil Arya, A K Yadav, M K Singh, Y Bhat and A L Sharma</i></b></p>
10.	<p><i>Recent Advancements in Science, Commerce &amp; Technology 2016 (NCRSCT'16) held on April 05-06, 2016 Organized by Mata Sahib Kaur Girls Guru Ki Kashi, Damdama Talwandi Sabo, Punjab, India</i></p> <p><i>Hardeep Singh, Preeti pal, Anil Arya and A. L. Sharma*</i></p>

11.	<i>Recent Advancements in Science, Commerce &amp; Technology 2016 (NCRSCT'16) held on April 05-06, 2016 Organized by Mata Sahib Kaur Girls Guru Ki Kashi, Damdama Talwandi Sabo, Punjab, India</i> <i>Preeti pal, Hardeep Singh, Anil Arya and A. L. Sharma*</i>
12.	<i>4<sup>th</sup> International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME-16) Feb 25-27, 2016 at Baba Farid College of Engineering and Technology, Bathinda, Punjab, India</i> <i>Parul Kumar Sharma, Anshul Kumar Sharma, M .Sadiq, Ritesh Kumar and A. L. Sharma*</i>
13.	<i>4<sup>th</sup> International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME-16) Feb 25-27, 2016 at Baba Farid College of Engineering and Technology, Bathinda, Punjab, India</i> <i>Anil Arya, Sweety Sharma, and A. L. Sharma*</i>
14.	<i>4<sup>th</sup> International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME-16) Feb 25-27, 2016 at Baba Farid College of Engineering and Technology, Bathinda, Punjab, India</i> <i><u>Chandni Devi</u>, Ram Swaroop and A.L. Sharma*</i>
15.	<i>19<sup>th</sup> Punjab Science Congress,(Influence of Science and Technology on Environment and Health), Feb 07-09,2016 at SUS Group of Institution, Tangori, S.A.S. Nagar Mohali, Punjab, India</i> <i>Parul Kumar Sharma<sup>1</sup>, Anshul Kumar Sharma<sup>2</sup>, M .Sadiq<sup>3</sup>, and A. L. Sharma*<sup>1</sup></i>
16.	<i>20th Symposium &amp; Workshop on Thermal Analysis Jan 18-20, 2016 (Symposium) Jan 21-22, 2016 (Workshop) at IIT Varanasi</i> <i>Anil Arya, Sweety Sharma, M. Sadiq and A. L. Sharma*</i>
17.	<i>20th Symposium &amp; Workshop on Thermal Analysis Jan 18-20, 2016 (Symposium) Jan 21-22, 2016 (Workshop) IIT Varanasi</i> <i>M. Sadiq, A. L. Sharma*, Anil Arya, Deep Kumar thakur and P.K. Sharma</i>
18.	<i>20th Symposium &amp; Workshop on Thermal Analysis Jan 18-20, 2016 (Symposium) Jan 21-22, 2016 (Workshop) IIT Varanasi</i> <i>Deep Kumar Thakur, M. sadiq and A. L. Sharma*</i>
19.	<i>60<sup>th</sup> DAE Solid State Physics Symposium (2015), IIT Bombay, Mumbai, 21-25, December, 2015 at AMITY University Noida UP</i> <i>Anil Arya, Sweety Sharma and A. L. Sharma*</i>
20.	<i>International Conference on Recent Trends In Materials And Devices (ICRTMD 2015) 15<sup>th</sup> – 17<sup>th</sup> December 2015 organized by Amity Institute for Advanced Research and Studies (Materials &amp; Devices) &amp; Amity Institute of Applied Sciences</i> <i><u>Ritesh Kumar</u> and A. L. Sharma*</i>
21.	<i>International Conference on Recent Trends In Materials And Devices (ICRTMD 2015) 15<sup>th</sup> – 17<sup>th</sup> December 2015 organized by Amity Institute for Advanced Research and Studies (Materials &amp; Devices) &amp; Amity Institute of Applied Sciences</i>

	<i>M. Sadiq, Anil Arya and A. L. Sharma*</i>
22.	<i>Structural and Electrical Properties of Polymer Nanocomposite Films International Conference on Recent Trends In Materials And Devices (ICRTMD 2015) 15<sup>th</sup> – 17<sup>th</sup> December 2015 organized by Amity Institute for Advanced Research and Studies (Materials &amp; Devices) &amp; Amity Institute of Applied Sciences <u>Chandni Devi, Ram Swaroop and A. L. Sharma*</u></i>
23.	<i>International Conference on Recent Trends In Materials And Devices (ICRTMD 2015) 15<sup>th</sup> – 17<sup>th</sup> December 2015 organized by Amity Institute for Advanced Research and Studies (Materials &amp; Devices) &amp; Amity Institute of Applied Sciences <u>Sweety Sharma, Anil Arya and A. L. Sharma*</u></i>
24.	<i>International Conference on Recent Trends In Materials And Devices (ICRTMD 2015) 15<sup>th</sup> – 17<sup>th</sup> December 2015 organized by Amity Institute for Advanced Research and Studies (Materials &amp; Devices) &amp; Amity Institute of Applied Sciences <u>Parul Kumar Sharma<sup>1</sup>, Anshul Kumar Sharma<sup>2</sup>, M Sadiq<sup>1</sup> A. L. Sharma*<sup>1</sup></u></i>
25.	<i>International Conference on Recent Trends In Materials And Devices (ICRTMD 2015) 15<sup>th</sup> – 17<sup>th</sup> December 2015 organized by Amity Institute for Advanced Research and Studies (Materials &amp; Devices) &amp; Amity Institute of Applied Sciences <u>Shruti Agnihotri, Anil Arya and A. L. Sharma*</u></i>
26.	<i>India International Science Festival (IISF) held at Dec 04-08, 2015 organized by Indian Institute of Technology (IIT) New Delhi, India <u>Shruti Agnihotri, Sangeeta and A. L. Sharma*</u></i>
27.	<i>India International Science Festival (IISF) held at Dec 04-08, 2015 organized by Indian Institute of Technology (IIT) New Delhi, India <u>Anil Arya, Sweety Sharma and A. L. Sharma*</u></i>
28.	<i>India International Science Festival (IISF) held at Dec 04-08, 2015 organized by Indian Institute of Technology (IIT) New Delhi, India <u>Sweety Sharma, Anil Arya and A. L. Sharma*</u></i>
29.	<i>3rd National Conference on Photonics and Materials Science (NCPMS-2015) on November 18-19, 2015 at Department of Applied Physics GJUS &amp;T, Hisar Haryana, India <u>Anil Arya, Sweety Sharma and A. L. Sharma*</u></i>
30.	<i>3rd National Conference on Photonics and Materials Science (NCPMS-2015) on November 18-19, 2015 at Department of Applied Physics GJUS &amp;T, Hisar Haryana, India <u>Chandni Bhatt, Ram Swaroop, Anil Arya, Parul Kumar Sharma and A. L. Sharma*</u></i>
31.	<i>3rd National Conference on Photonics and Materials Science (NCPMS-2015) on November 18-19, 2015 at Department of Applied Physics GJUS &amp;T, Hisar Haryana, India <u>P.K. Sharma<sup>1</sup>, A.K. Sharma<sup>2</sup>, M. Sadiq<sup>1</sup>, Ritesh Kumar<sup>1</sup> and A. L. Sharma*<sup>1</sup></u></i>
32.	<i>3rd National Conference on Photonics and Materials Science (NCPMS-2015) on November 18-19,</i>



	2015 at Department of Applied Physics GJUS &T, Hisar Haryana, India <u>M. Sadiq<sup>12</sup>, Anil Arya<sup>1</sup>, Deep k Thakur<sup>1</sup> and A. L. Sharma<sup>*1</sup></u>
33.	3rd National Conference on Photonics and Materials Science (NCPMS-2015) on November 18-19, 2015 at Department of Applied Physics GJUS &T, Hisar Haryana, India Sweetysharma, Anil Arya and A. L. Sharma*
34.	3rd National Conference on Photonics and Materials Science (NCPMS-2015) on November 18-19, 2015 at Department of Applied Physics GJUS &T, Hisar Haryana, India <u>Shruti Agnihotri and A. L. Sharma*</u>
35.	International Conference on Condensed Matter and Applied Physics (ICC-2015) held at Oct 30-31, 2015 at Bikaner, Rajasthan, India. Anil Arya <sup>1</sup> , M. Sadiq <sup>2</sup> and A. L. Sharma <sup>1*</sup>
36.	International Conference on Condensed Matter and Applied Physics (ICC-2015) held at Oct 30-31, 2015 at Bikaner, Rajasthan, India. Chandni Bhatt, Ram Swaroop, Parul Kumar Sharma and A. L. Sharma*
37.	International Conference on Condensed Matter and Applied Physics (ICC-2015) held at Oct 30-31, 2015 at Bikaner, Rajasthan, India. Parul Kumar Sharma, M. Sadiq, Chandni Bhatt and A. L. Sharma*
38.	International Conference on Condensed Matter and Applied Physics (ICC-2015) held at Oct 30-31, 2015 at Bikaner, Rajasthan, India. Sangeeta, Shruti Agnihotri, Anil Arya and A. L. Sharma*
39.	International Conference on Condensed Matter and Applied Physics (ICC-2015) held at Oct 30-31, 2015 at Bikaner, Rajasthan, India. Shruti Agnihotri, Sangeeta Rattan and A. L. Sharma*
40.	National Conference on Physics Industry Interface (NCPPII-2015) at KU, Kurukshetra Sept 02-04, 2015 Anil Arya and A. L. Sharma*
41.	Third National Conference on Nanoscience and Instrumentation Technology June 06-07, 2015, Sweety Sharma, Anil Arya and A. L. Sharma*
42.	Third National Conference on Nanoscience and Instrumentation Technology June 06-07, 2015, M. Sadiq, P K Sharma, Deep K Thakur and A. L. Sharma*
43.	Third National Conference on Nanoscience and Instrumentation Technology June 06-07, 2015, Anil Arya, Sweety Sharma and A. L. Sharma*
44.	National Conference on Advances in Materials and Materials Processing (AMMP-15) May 22-23, 2015. Mohd Sadiq and A. L. Sharma*
45.	4th International Conference on "Current Developments in Atomic, Molecular Optical and Nano physics with Applications" CDAMOP-2015 March 11-14, 2015. Department of Physics and Astrophysics, University of Delhi, India, 110007

	<i>Mohd Sadiq and A. L. Sharma*</i>
46.	<i>2<sup>nd</sup> National Symposium on Interdisciplinary Sciences, 27-28 Feb 2015, G.G.M. Sciences College, Jammu (J&amp;K). Mohd Sadiq and A. L. Sharma*</i>
47.	<i>National Conference on Microscopy &amp; Advances in Material Sciences (NCMAMS - 2015), 2 – 4 March, 2015, Department of Physics, University of Jammu, Jammu – 180006, India. Mohd Sadiq and A. L. Sharma*</i>
48.	<i>14<sup>th</sup> Asian Conference on Solid State Ionics (ACSSI-14) 2014 at NUS Singapore June 24-27, 2014 A. L. Sharma and A. K. Thakur*</i>
49.	<i>The 19th International Conference on Solid State Ionics at Japan 2-7 June 2013. A. L. Sharma and A. K. Thakur*</i>
50.	<i>6th India Singapore Joint Physics Symposium (ISJPS-2013) on Physics of Advanced Materials at IIT Kharagpur 25-27 Feb 2013. A. L. Sharma and A. K. Thakur*</i>
51.	<i>National Workshop on Radiation, at Central University of Jharkhand, Ranchi, India, 13-15 Feb, 2013. A. L. Sharma and A. K. Thakur*</i>
52.	<i>International Conference on Recent Trends in Applied Physics and Materials Science (RAM-2013) at Bikaner, India, 01-02 Feb 2013. A. L. Sharma and A. K. Thakur*</i>
53.	<i>57th DAE Solid State Physics Symposium (2012), IIT Bombay, Mumbai, 03-07, December, 2012. A. L. Sharma and A. K. Thakur*</i>
54.	<i>23rd Annual General Meeting Materials Research Society of India (MRSI), Thapar University Patiyala, INDIA 13-15 Feb, 2012. A. L. Sharma and A. K. Thakur*</i>
55.	<i>International Conference on Theoretical and Applied Physics (ICTAP), IIT Kharagpur, India, 1-2 December, 2011. A. L. Sharma and A. K. Thakur*</i>
56.	<i>National Conference Cum Workshop on RDEM, BIT Mesra, Ranchi, India, 12-14 May, 2011. A. L. Sharma and A. K. Thakur*</i>
57.	<i>International Conference on Materials for advanced technology (ICMAT 2009), Singapore, 28 June – 03 July 2009. A. L. Sharma and A. K. Thakur*</i>
58.	<i>53rd DAE Solid State Physics Symposium (2008), BARC, Mumbai, 16-20, December, 2008.</i>

	<i>A. L. Sharma and A. K. Thakur*</i>
59.	<i>11th Asian Conference on Solid State Ionics, Bharathiar University, Coimbatore, 9-13, June, 2008. A. L. Sharma and A. K. Thakur*</i>
60.	<i>10th Conference of International Academy of Physical Science, Guru Ghasidas University, Bilaspur, 12-14, Jan, 2008. A. L. Sharma and A. K. Thakur*</i>

### *Teaching Assignment at Mastor and Doctor Level Course*

- *Mathematical Methods (PHY.501)*
- *Electronic Circuit Theory (PHY.504)*
- *Computational Method Lab (PHY.555)*
- *Research Mehodology (PHY.601 twice)*
- *Computer Lab (PHY.652)*
- *Digital Electronic Theory (PHY.510)*
- *Nanostructured Materials (PHY.608)*
- *Thin Films Fabrication and Vacuum Technology (PHY.606)*
- *Advanced Solid State Physics (PHY.605)*
- *Modern Physics Laboratory (PHY.559)*
- *Solid State Physics Laboratory (PHY.562)*
- *Nuclear Physics Laboratory (PHY.563)*
- *Electronic Circuits Laboratory (PHY.554 twice)*
- *Digital Electronics Laboratory (PHY.560)*
- *Computational Methods Laboratory (PHY.555)*
- *Thin Films Laboratory (PHY.657)*

### *NEW COURSE DEVELOPMENT*

- ✚ Mathematical Methods (M.Sc.)
- ✚ Electronic Circuit Theory (M.Sc.)
- ✚ Nanostructured Materials (M.Phil.)
- ✚ Physics of Nanomaterials (M.Sc.)
- ✚ Research Methodology (M.Sc.)
- ✚ Electronics and Digital Electronics Laboratory (M.Sc.)
- ✚ Thin Films fabrication and Vacuum Technology (M.Phil.)

## Research Guidance

### M.Phil. Dissertations

S.No.	Name of Students	Registration No:	Title of the dissertation
1)	Deep Kumar	CUPB/MPh/SBAS/PMS/2013-14/03	Effect of salt concentration on prepared free standing polymeric films
2)	Mohd Sadiq	CUPB/MPh/SBAS/PMS/2013-14/08	Preparation of thin polymer nanocomposite films for energy storage/conversion devices
3)	Ritesh Kumar	CUPB/MPh/SBAS/PMS/2013-14/10	Synthesis and characterization of silicate layered cathode material for energy storage /conversion devices
4)	Parul Kumar Sharma	CUPB/MPh/SBAS/PMS/2014-15/01	To improve the ionic conductivity of solid polymer nanocomposite films
5)	Shruti Agnihotri	CUPB/MPh/SBAS/PMS/2014-15/05	To see the effect of CNT on prepared oxide materials
6)	Sangeeta Rani	CUPB/MPh/SBAS/PMS/2014-15/02	Preparation and characterization of oxide materials for Energy storage conversion devices
7)	Chandani Devi	CUPB/MPh/SBAS/PMS/2014-15/08	Effect of Nanoparticles on Electrochemical Properties of plastic separator films

## M.Sc. Dissertations

S. No	Name of Student	Registration Number	Title of the dissertation
1)	Sweety Sharma	CUPB/MSC/SBAS/PMS /2013-14/05	Development of layered lithium Manganese oxides
2)	Anil Arya	CUPB/MSC/SBAS/PMS /2013-14/07	Transport Properties of free standing polymeric films
3)	Hardeep Singh	CUPB/MSc/SBAS/PMS/2014-15/04	To Study the Effect of Nanoparticle in Free Standing Polymeric Films
4)	Preeti Pal	CUPB/MSc/SBAS/PMS/2014-15/06	To Study and Analyze the Doped LiCoO <sub>2</sub> Cathode Materials
5)	Komal Kanwar	15mscphy02	To Study the Structural/Microstructural and Electrochemical Properties of Fe Doped Orthosilicate Cathode Materials
6)	Nirbhay Singh	15mscphy10	To Study the Enhancement in Electrochemical Properties of Orthosilicate Cathode Materials
7)	Fayaz Ahmed Fazil	15mscphy15	To Study the Microstructural and Electrical Behaviour of Cr Doped Cathode Materials

## Ph. D. Dissertations

S.No	Name of Student	Registration Number	Title of PhD Thesis	Status
1	Anil Arya	15phdphs01	Structural and Electrochemical Properties of Intercalated and Dispersed Type Polymer Nanocomposite Films	<b>Synopsis:</b> Done

## **RESEARCH PROJECTS**

*Recommended UGC Newly Recruited Faculty Start-Up Grant dated on 16-09-2013, "Development of nanostructured Plastic Separator as Rechargeable Battery Component.", Two years, 6.0 Lakh, University Grant Commission.*

*Received RSM grant on the topic: "Preparation characterization and evaluation of free standing polymeric films for energy storage/conversion device applications" by CUP-Bathinda for Two Years.*

### **Organized Seminar/Work Shop:**

Organized one day conference entitled "One day Acquaintance Programme on Inter University Accelerator Centre (IUAC)" organized by Central University of Punjab, Bathinda and Inter University Accelerator Centre (IUAC), New Delhi on 4<sup>th</sup> April, 2016.

National Workshop on Radiation-A Powerful Tool for Research in Physical, Chemical and Life sciences on February 13-15, 2013.

Organized one day conference entitled "One day Acquaintance Programme on Inter University Accelerator Centre (IUAC)" organized by Central University of Jharkhand, Ranchi and Inter University Accelerator Centre (IUAC), New Delhi On 23<sup>rd</sup> November, 2012

*National Organizing Committee Member* in the 15<sup>th</sup> Asian Conference on Solid State Ionics (ACSSI2K16), Nov 27-30, 2016, Indian Institute of Technology (IIT) Patna, India.

### **Orientation/Refresher courses**

*Winter School on Effective Teaching and Research at Birla Institute of Technology Patna Campus during 24-29 Dec. 2012.*

*Orientation course at Academic Staff College, Lucknow, University of Lucknow. (Jan 1 to 28, 2015).*

*Refresher Course in Physical Sciences, at UGC-Human Resource and Development Centre, Punjabi University, Patiala, Pujab, India (June 20 to July 09, 2016).*

## Professional Membership: Indian Physics Association (Life Member)

Recipient of **“Best Paper Award”** entitled *“Optimization of Concentration of MWCNT in Terms of Performance of Prepared Novel Cathode Material for Energy Storage”* at the *“3<sup>rd</sup> National Conference on Photonics and Materials Science (NCPMS-2015)”* on November 18-19, 2015 held at GJUS &T, Hisar Haryana, India

### **Administrative Activity:**

**28-05-2013 to 14-07-2015** Officiating Incharge (OIC) of Centre for Physical and Mathematical Sciences, School of Basic and Applied Science, Central University of Punjab, Bathinda-151001

**14-07-2015 to 04-01-2016** Officiating Incharge (OIC) of Centre for Physical Sciences, School of Basic and Applied Science, Central University of Punjab, Bathinda-151001

**30-01-2016 to 07-02-2016** Officiating Incharge (OIC) of Centre for Physical Sciences, School of Basic and Applied Science, Central University of Punjab, Bathinda-151001

## Extension Lecture/Invited Talk

1. Extension Lecture on **“Plasmon’s (Condensed Matter Physics) and Comparator and Triggering (Electronics)”** at Baba Farid College, Muktsar Road, Bathinda, Punjab, India on 07-04-2017.
2. Extension Lecture on **“multistage amplifier (Electronics)”** at Baba Farid College, Muktsar Road, Bathinda, Punjab, India on 18-10-2016.
3. Baba Farid College for delivering a lecture on 08-04-2017
4. Invited Talk on **“Study and Evaluation of MWCNT Coated Cathode Materials for Energy Storage Applications”** in acquaintance program of IUAC at Central University of Punjab, Bathinda, India on 04-04-2016.
5. Extension Lecture on **“Dielectric Materials (Condensed Matter Physics)”** at Baba Farid College, Muktsar Road, Bathinda, Punjab, India on 22-03-2016.
6. Introduction to Nanomaterials  
Delivering Lecture in Motivational Contact Programme for Talented School Students of Punjab jointly Organized by Central University of Punjab and Punjab State Council for Science and Technology from 14th to 18th Sept 2015.

7. Presented a model entitled “*Cell Phone Controlled Agricultural Water Pump*” in first Innovators Day at Central University of Punjab on 17<sup>th</sup> January, 2014.
8. Faculty seminar on the topic “*Nanostructured Plastic Separator for Renewable Energy Applications*” on 05-07-2013, Central University of Punjab, Bathinda-151001.

**Reviewer of Research Journals:**

1. RSC Advances (Royal Society of Chemistry)
2. Ionics
3. Materials Science and Engineering B