

Professor Amreesh Chandra

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Professional Experience

- I. Professor, Department of Physics, **Indian Institute of Technology**, Kharagpur, West Bengal, India, February 2020 – onwards
- II. Associate Professor, Department of Physics, **Indian Institute of Technology**, Kharagpur, West Bengal, India, August 2014 – February 2020
- III. Assistant Professor, Department of Physics, **Indian Institute of Technology**, Kharagpur, West Bengal, India, January 2009 – August 2014.
- IV. Research Officer, Physical Science, University of Surrey, Guildford GU27XH, **United Kingdom**, Jan. 2007 – January 2009.
- V. Max Planck Post Doctoral Fellow Max Planck Institute for Polymer Research, Mainz, **Germany**, June 2005 – December 2006.
- VI. Senior Research Fellow, School of Materials Science and Technology, **Institute of Technology**, B.H.U., Varanasi, India, August 2002 – April 2005.
- VII. Ph.D. (Materials Science and Technology), School of Materials Science and Technology, **Institute of Technology**, B.H.U., Varanasi, India. December 2004
- VIII. M.Sc. (Physics), Department of Physics, **Banaras Hindu University**, Varanasi, 1998.
- IX. B.Sc. (Physics) Department of Physics, **Banaras Hindu University**, Varanasi, 1996.

Major Research Areas: Energy storage devices, functional nanomaterials, sensors and gas sensors.

Research Publications: > 100 (for details: see <http://www.iitkgp.ac.in/departement/PH/faculty/ph-achandra#resp-tab2>)

Patents: 1

Books: 4

Conference Papers: 65

Teaching Experience: UG + PG courses for 13 years.

Courses Taught: (i) Science & Technology of Nanomaterials, (ii) Condensed Matter Physics (iii) Physics I, (iv) Physics of Functional Materials (v) Analytical Techniques, (vi) Experimental Methods, (vii) Electronics for Physicists, (viii) Physics Labs (ix) Physics of Renewable Energy Systems (x) Fluid Mechanics and Elasticity (xi) Thin Film Technology

Number of Students Supervised/ Guided:

Ph.D. s: 10 completed (+ 9 ongoing)

M.Tech.s: 16 completed (+ 1 ongoing)

M.Sc.: 18 completed (+ 2 ongoing)

Awards/Recognitions/Achievements

1.0. Expert Panel Member for Screening of the Letter of Intent (LoI) received against the **DST** call on Integrated Clean Energy Material Acceleration Platform(IC-MAP) in the area of Materials, Devices & Sensors. (2020)

2.0. ENDEAVOUR EXECUTIVE FELLOWSHIP AWARD, Government of Australia, 2018.

3.0. ALEXANDER VON HUMBOLDT CONNECT FELLOWSHIP, AvH Foundation (Germany), 2013.

4.0. IIT FACULTY – DAAD EXCHANGE FELLOWSHIP, DAAD (Germany), 2012.

5.0. MAX PLANCK INDIA FELLOWSHIP AWARD, Max Planck Society (Germany), 2010.

6.0. YOUNG SCIENTIST RESEARCH AWARD, Department of Atomic Energy (DAE), India, 2010.

7.0. YOUNG SCIENTIST AWARD, Indian Science Congress Association, India, 2004.

8.0. YOUNG SCIENTIST AWARD, *International Conference on Electroactive Polymers: Materials and Devices, Dalhousie, India, 2004.*

Along with my Research Team and Students

- 1) **Puja De**; Debabrata Mandal; Abhishek Kumar; Sudipta Biswas; Amreesh Chandra, **Best Poster Award** at DAE-SSPS 2021 Symposium held online from Dec. 15-19, 2021.
- 2) **Vikas Sharma** and Amreesh Chandra, **Best Oral Presentation**, at 5th International Conference on Nanoscience and Nanotechnology (ICONN-2019), SRM IST, INDIA-2019
- 3) **Surbhi Priya** and Amreesh Chandra, **Best Paper Presentation Award**, at 5th International Conference on Nanoscience and Nanotechnology (ICONN-2019), SRM IST, INDIA-2019
- 4) **Vikas Sharma** and Amreesh Chandra, **Young Scientist Award**, at 7th International Conference on Electroactive Polymers (ICEP-2019), Udaipur, INDIA-2019
- 5) **Prasenjit Halder** and Amreesh Chandra, **Best Poster Award**, at International conference on Nanotechnology: Ideas, Innovations, and Initiatives-2017 (ICN:3I-2017), IIT Roorkee, INDIA-2017
- 6) **Prasenjit Halder** and Amreesh Chandra, **BEST POSTER AWARD**, 12th National Conference on Solid State Ionics (NCSSI-12) organized by Department of Physics BITS Pilani, Pilani Campus, Dec. **2017**
- 7) Vikas Sharma and Amreesh Chandra, **BEST POSTER AWARD**, International Symposium on Functional Materials (ISFM-2018), organized by IIT Kanpur, Panjab University and University of Illinois Chicago at Chandigarh in April **2018**.
- 8) **Vikas Sharma** and Amreesh Chandra, **2nd position in Poster Presentation**, at International conference on Nanotechnology: Ideas, Innovations, and Initiatives-2017 (ICN:3I-2017), IIT Roorkee, INDIA-2017
- 9) **Inderjeet Singh**, Sayan Dey, Sumita Santra, and Amreesh Chandra, **SURESH CHANDRA MEMORIAL AWARD FOR BEST POSTER**, 6th International Conference on Electroactive Polymers and Ceramics held at IIT Kharagpur in Feb. **2017**
- 10) **Vikas Sharma** and Amreesh Chandra, **BEST POSTER AWARD**, Research Scholars Day, School of Nanoscience and Nanotechnology, IIT Kharagpur, **2016**
- 11) **Sushanta Lenka** and Amreesh Chandra, **3rd position in Poster Presentation**, at International conference on Nanotechnology: Ideas, Innovations, and Initiatives-2017 (ICN:3I-2017), IIT Roorkee, INDIA-2017
- 12) **Inderjeet Singh** and Amreesh Chandra, **BEST POSTER AWARD**, 100th Indian National Science Congress Meeting, Kolkata, **2013**.
- 13) **A. Singh** and Amreesh Chandra, **YOUNG SCIENTIST AWARD**, 100th Indian National Science Congress Meeting, Kolkata, **2013**
- 14) **A. Singh** and Amreesh Chandra, **BEST POSTER AWARD**, 5th International Conference on Electroactive Polymers: Materials and Devices, BHU, Varanasi, **Nov. 2012**.
- 15) **J. Khara** and Amreesh Chandra **BEST POSTER AWARD**, 4th International Conference on Electroactive Polymers: Materials and Devices, Surujkund, **Nov. 2010**.

Sponsored/Funded Projects undertaken/ currently being supervised as Principal Investigator

- I) ***Hierarchically nanostructured energy materials for next generation Na-ion storage systems and their use in renewable energy systems.***
Sponsoring Agency: **DST (India) (2017-2022)**
TOTAL GRANT: ~Rs. 94.5 Lakhs
- II) ***Head, Max Planck Partner Group on Hybrid Nanostructures for alternative energy systems***
Sponsoring Agency: **IGSTC (India) and MPG (Germany) (Five years - 2014-19).**
TOTAL GRANT: ~Rs. 1.5 CRORES
- III) ***Next Generation Supercapacitors with High Energy Storage Capacity***
Sponsoring Agency: **SGIRG Scheme, Indian Institute of Technology Kharagpur (2014-16)**
TOTAL GRANT: Rs. 25 LAKHS
- IV) ***Use of Nanomaterials in Alternative Energy Systems***
Sponsoring Agency: **Indo-UK UKIERI Thematic Exchange Project (2012-2014)**
TOTAL GRANT: UK POUNDS 40,000 (~Rs. 36.00 Lakhs)
- V) ***Polymer composites for energy Systems***

Sponsoring Agency: **Max Planck Society**, Germany (2010-13)

TOTAL GRANT: EUROS 12,000 (Rs. 8.00 Lakhs)

VI) Structural Phase Transition Studies in Multifunctional Ceramics

Sponsoring Agency: **DAE-BRNS, BARC**, Mumbai, India. (2010-2013)

TOTAL GRANT: ~ Rs. 21 LAKHS

VII) Multifunctional Ceramics and Polymer Composites: Their Synthesis and Characterization

Sponsoring Agency: **ISIRD, IIT Kharagpur**, India (2010-2013)

TOTAL GRANT: ~Rs. 5.0 LAKHS

[B] Sponsored/Funded Projects undertaken as Co- Principal Investigator

I) **Extensional rheometer for microscale samples**

Sponsoring Agency: DST (India) (2013-16), **Total Grant: ~RS. 44.00 Lakhs**

II) **Fist Project – To strengthen the post graduate teaching and research facilities in the department**

Sponsoring Agency: DST (India) (2011-16), **Total Grant: ~ RS. 365.00 Lakhs**

List of Publications

- 1) Pseudo 2-dimensional nanostructures of metal oxides for high-performance supercapacitors. D Mandal, S Biswas, A Chowdhury, Amreesh Chandra. **Materials Advances** (2022).
- 2) Nano Ni_{1-x}Co_xO system: Composition dependent phase evolution and electrochemical behaviour. S Banerjee, A Chowdhury, Amreesh Chandra, V Grover. **Materials Chemistry and Physics** 286, 126202 (2022)
- 3) 2D Flower-like Porous Nanostructures of Layered SnS₂ for High-Performance Supercapacitors: Correlating Theoretical and Experimental Studies. D Mandal, J Halder, P De, A Chowdhury, S Biswas, Amreesh Chandra. **ACS Applied Energy Materials** (2022)
- 4) Superior-catalytic performance of Ni-Co Layered double hydroxide nanosheets for the reduction of p-nitrophenol. S Kansal, P Singh, S Biswas, C Ananya, M Debabrata, S Priya, T Singh, Amreesh Chandra. **International Journal of Hydrogen Energy** (2022).
- 5) Understanding the electrocatalysis OER and ORR activity of ultrathin spinel Mn₃O₄. CC Gowda, A Mathur, A Parui, P Kumbhakar, P Pandey, S Sharma, Amreesh Chandra, A K Singh, A Halder, C S Tiwary. **Journal of Industrial and Engineering Chemistry** (2022)
- 6) Graphene decorated LiMn₂O₄ Electrode Material for hybrid type Energy storage devices. D Mandal, L Bharti, S Biswas, Amreesh Chandra. **Energy Storage** (2022)
- 7) Structure–property correlation in (1-y) Bi_{0.9}Ca_{0.1}FeO₃-(y) PbTiO₃ (0.0 < y < 1.0) solid solutions. P Tirupathi, SK Mandal, A Chandra. **Journal of Electroceramics**, 1-15 (2022)
- 8) High-Performance, Nitrogen-Doped, Carbon-Nanotube-Based Electrochemical Sensor For Vitamin D3 Detection. H Bora, D Mandal, A Chandra. **ACS Applied Bio Materials** 5 (4), 1721-1730 (2022)
- 9) Carbon material produced by hydrothermal carbonisation of food waste as an electrode material for supercapacitor application: A circular economy approach. S Venna, HB Sharma, D Mandal, HP Reddy, S Chowdhury, Amreesh Chandra, B K Dubey. **Waste Management & Research**, 0734242X221081667 (2022)
- 10) Redox mediator-induced electrochemical reactions at the electrode-electrolyte interface: Making sodium-ion supercapacitors a competitive technology. A Chowdhury, S Biswas, T Singh, A Chandra. **Electrochemical Science Advances** 2 (1), e2100030, 3, (2022)
- 11) Facile strategy of using conductive additive supported NaMnPO₄ nanoparticles for delivering high performance Na-ion supercapacitors. A Chowdhury, S Biswas, D Mandal, A Chandra. **Journal of Alloys and Compounds**, 163733, 1, (2022)
- 12) Role of porosity and diffusion coefficient in porous electrode used in supercapacitors – Correlating theoretical and experimental studies. Puja De, Joyanti Halder, Chinmayee Chowde Gowda, Sakshi

- Kansal, Surbhi Priya, Satvik Anshu, Ananya Chowdhury, Debabrata Mandal, Sudipta Biswas, Brajesh Kumar Dubey, Amreesh Chandra. **Electrochemical Science Advances** 1, 1-15 (2022)
- 13) Facile strategy of using conductive additive supported NaMnPO₄ nanoparticles for delivering high performance Na-ion supercapacitors. A Chowdhury, S Biswas, D Mandal, Amreesh Chandra. **Journal of Alloys and Compounds**, 163733 (2022)
 - 14) Stable Na-ion supercapacitor under non-ambient conditions using maricite-NaMnPO₄ nanoparticles A Chowdhury, S Biswas, A Dhar, PS Burada, Amreesh Chandra. **Journal of Power Sources** 516, 230679 (2021).
 - 15) High performance magnetic pseudocapacitors-Direct correlation between specific capacitance and diffusion coefficients, A Chowdhury, S Biswas, V Sharma, J Halder, A Dhar, B Sundaram, B K Dubey and Amreesh Chandra. **Electrochimica Acta** 397, 139252 (2021).
 - 16) Anomalous structural behavior and antiferroelectricity in BiGdO₃: Detailed temperature and high-pressure study. R Jana, A Dutta, P Saha, K Mandal, B Ghosh, Amreesh Chandra, I Das, G D Mukherjee **Journal of Physics: Condensed Matter** 33, 495403 (2021).
 - 17) Emerging two-dimensional tellurides. Saif Siddique, Chinmayee Chowde Gowda, Solomon Demiss, Raphael Tromer, Sourav Paul, Kishor Kumar Sadasivuni, Emmanuel Femi Olu, Amreesh Chandra, Vidya Kochat, Douglas S Galvão, Partha Kumbhakar, Rohan Mishra, Pulickel M Ajayan, Chandra Sekhar Tiwary. **Materials Today** 1 (2021).
 - 18) Scalable Synthesis of Atomically Thin Gallium Telluride Nanosheets for Supercapacitor Applications Saif Siddique, Chinmayee C Gowda, Raphael Tromer, Solomon Demiss, Abhay R Singh Gautam, Olu E Femi, Partha Kumbhakar, Douglas S Galvao, Amreesh Chandra, Chandra S Tiwary. **ACS Applied Nano Materials** 4 (5), 4829-4838 (2021).
 - 19) Hierarchical SnO₂ nanostructures for potential VOC sensor. S Priya, J Halder, D Mandal, A Chowdhury, T Singh, Amreesh Chandra. **Journal of Materials Science** 56 (16), 9883-9893 (2021).
 - 20) Convert waste petroleum coke to multi-heteroatom self-doped graphene and its application as supercapacitors. D Mandal, PL Mahapatra, R Kumari, P Kumbhakar, A Biswas, B Lahiri, Amreesh Chandra and C S Tewary. **Emergent Materials** 4 (2), 531-544 (2021)
 - 21) Emerging 2D metal oxides and their applications. Partha Kumbhakar, Chinmayee Chowde Gowda, Preeti Lata Mahapatra, Madhubanti Mukherjee, Kirtiman Deo Malviya, Mohamed Chaker, Amreesh Chandra, Basudev Lahiri, PM Ajayan, Deep Jariwala, Abhishek Singh, Chandra Sekhar Tiwary. **Materials Today**, 21 (2021)
 - 22) Hierarchical NaFePO₄ nanostructures in combination with an optimized carbon-based electrode to achieve advanced aqueous Na-ion supercapacitors. S Biswas, D Mandal, T Singh, Amreesh Chandra. **RSC Advances** 11 (48), 30031-30039 (2021)
 - 23) Redox mediator induced electrochemical reactions at the electrode-electrolyte interface: Making sodium-ion supercapacitors a competitive technology. A Chowdhury, S Biswas, T Singh, Amreesh Chandra. **Electrochemical Science Advances**, e2100030 (2021)
 - 24) External vibrations can destroy the specific capacitance of supercapacitors—from experimental proof to theoretical explanations. S Biswas, V Sharma, T Singh, Amreesh Chandra. **Journal of Materials Chemistry A** 9 (10), 6460-6468 (2021)
 - 25) A study of microbially fabricated bio-conjugated quantum dots for pico-molar sensing of H₂O₂ and glucose. R Mahle, D Mandal, P Kumbhakar, Amreesh Chandra, CS Tiwary, R Banerjee. **Biomaterials Science**, 9 (1), 157-166 (2021)
 - 26) Theoretical model for magnetic supercapacitors—From the electrode material to electrolyte ion dependence. A Chowdhury, A Dhar, S Biswas, V Sharma, PS Burada, Amreesh Chandra. **The Journal of Physical Chemistry C** 124 (49), 26613-26624 (2020).
 - 27) Hierarchical cage-frame type nanostructure of CeO₂ for bio sensing applications: from glucose to protein detection. D Mandal, S Biswas, A Chowdhury, D De, CS Tiwary, AN Gupta, T Singh, and Amreesh Chandra. **Nanotechnology** 32 (2), 025504 (2020).

- 28) Curcumin complexed with graphene derivative for breast cancer therapy. D De, CK Das, D Mandal, M Mandal, N Pawar, Amreesh Chandra, AN Gupta. **ACS Applied Bio Materials** 3 (9), 6284-6296.
- 29) Controlling reaction kinetics of layered zinc vanadate having brucite-like Zn–O layers supported by pyrovanadate pillars for use in supercapacitors. A Chowdhury, R Shukla, V Sharma, S Neogy, Amreesh Chandra, V Grover, A K Tyagi. **Journal of Alloys and Compounds** 829, 154479 (2020)
- 30) Hollow nanostructures of metal oxides as emerging electrode materials for high performance supercapacitors. S Biswas, V Sharma, D Mandal, A Chowdhury, M Chakravarty, S Priya, T. Singh and Amreesh Chandra. **CrystEngComm** 22 (9), 1633-1644 (2020)
- 31) Mn₃O₄-polyaniline-graphene as distinctive composite for use in high-performance supercapacitors. P Haldar, S Biswas, V Sharma, A Chowdhury, Amreesh Chandra. **Applied Surface Science** 491, 171-179 (2019)
- 32) Effect of laser irradiation on graphene oxide integrated TE-pass waveguide polarizer. S Ghosh, D Mandal, Amreesh Chandra, SNB Bhaktha. **Journal of Lightwave Technology** 37 (10), 2380-2385 (2019)
- 33) Performance of Na-ion supercapacitors under non-ambient conditions—from temperature to magnetic field dependent variation in specific capacitance. S Biswas, A Chowdhury, Amreesh Chandra. **Frontiers in Materials** 6, 54 (2019)
- 34) DNA supported graphene quantum dots for Ag ion sensing. D Mandal, AN Gupta, Amreesh Chandra. **Nanotechnology** 30 (25), 255501 (2019)
- 35) Addition of redox additives—synergic strategy for enhancing the electrochemical activity of spinel Co₃O₄ based supercapacitors. MA Akhtar, A Chowdhury, Amreesh Chandra. **Journal of Physics D: Applied Physics** 52 (15), 155501 (2019)
- 36) Electrode Materials with Highest Surface Area and Specific Capacitance Cannot Be the Only Deciding Factor for Applicability in Energy Storage Devices: Inference of Combined Life Cycle Assessment and Electrochemical Studies. V Sharma, S Biswas, B Sundaram, P Haldar, B Dubey, Amreesh Chandra. **ACS Sustainable Chemistry & Engineering** 7 (5), 5385-5392 (2019)
- 37) Quantification of protein aggregation rates and quenching effects of amylin–inhibitor complexes. S Khatun, A Singh, D Mandal, Amreesh Chandra, AN Gupta. **Physical Chemistry Chemical Physics** 21 (36), 20083-20094 (2019)
- 38) Hollow nanostructures of metal oxides as efficient absorbers for electromagnetic interference shielding. V Sharma, K Manna, SK Srivastava, Amreesh Chandra **Journal of Physics D: Applied Physics** 52 (1), 015301 (2018).
- 39) Pressure induced anomalous magnetic behaviour in nanocrystalline YCrO₃ at room temperature. R Jana, V Pareek, P Khatua, P Saha, Amreesh Chandra, GD Mukherjee. **Journal of Physics: Condensed Matter** 30 (33), 335401 (2018)
- 40) Cerium-doped copper (II) oxide hollow nanostructures as efficient and tunable sensors for volatile organic compounds. I Singh, S Dey, S Santra, K Landfester, R Muñoz-Espí, Amreesh Chandra. **ACS Omega** 3 (5), 5029-5037 (2018)
- 41) High pressure studies on nanocrystalline YCrO₃. R Jana, Amreesh Chandra, GD Mukherjee. **AIP Conference Proceedings** 1953 (1), 030081 (2018)
- 42) Hollow nanostructures of metal oxides as next generation electrode materials for supercapacitors. V Sharma, I Singh, Amreesh Chandra. **Scientific Reports** 8 (1), 1-12 (2018)
- 43) Origin of superior catalytic activity in copper (II) oxide nanoflakes in comparison to solid or even hollow particles. V Sharma, I Singh, Amreesh Chandra. **Materials Letters** 211, 285-288 (2018)
- 44) Need for Revisiting the Use of Magnetic Oxides as Electrode Materials in Supercapacitors: Unequivocal Evidence of Significant Variation in Specific Capacitance under Variable Magnetic Field. V Sharma, S Biswas, Amreesh Chandra. **Advanced Energy Materials** 8, 1800573 (2018)

- 45) Understanding the Origin of Magnetic Field Dependent Specific Capacitance in Mn₃O₄ Nanoparticle Based Supercapacitors. P Haldar, S Biswas, V Sharma, Amreesh Chandra. **Journal of The Electrochemical Society**, 165 (14), A3230-A3239 (2018)
- 46) Use of an alternated cation–anion exchange membrane assembly for improved microbial fuel cell performance. J Khera, Amreesh Chandra. **Proceedings of the National Academy of Sciences, India Section A: Physical Sciences** (2017)
- 47) Trade-off between capacitance and cycling at elevated temperatures in redox additive aqueous electrolyte based high performance asymmetric supercapacitors. A Singh, MA Akhtar, Amreesh Chandra. **Electrochimica Acta** 229, 291-298 (2017)
- 48) Evolution of hollow nanostructures in hybrid Ce_{1-x}Cu_xO₂ under droplet confinement leading to synergetic effects on the physical properties. I Singh, K Landfester, R Muñoz-Espí, Amreesh Chandra. **Nanotechnology** 28 (7), 075601 (2017)
- 49) Enhancing specific energy and power in asymmetric supercapacitors-a synergetic strategy based on the use of redox additive electrolytes. A Singh, Amreesh Chandra. **Scientific Reports** 6 (1), 1-13 (2016).
- 50) Tuning Porous Structures of MnCo₂O₄ for Application in Supercapacitors and Catalysis. Md. A. Akhtar, V. Sharma, S. Biswas, and Amreesh Chandra. **RSC Advances** 6, 696296 -96305 (2016)
- 51) Enhancing Specific Energy and Power in Asymmetric Supercapacitors - A Synergetic Strategy based on the Use of Redox Additive Electrolytes. A. Singh and Amreesh Chandra. **Scientific Reports** 6, 25793-25804 (2016)
- 52) Significant Performance Enhancement in Asymmetric Supercapacitor based on Metal Oxides, Carbon nanotubes and Neutral Aqueous Electrolyte. A. Singh and Amreesh Chandra **Scientific Reports** 5, 15551 (2015)
- 53) A new approach for crystallization of copper(II) oxide hollow nanostructures with superior catalytic and magnetic response. I.Singh, K. Landfester, R. Munoz Espi and Amreesh Chandra. **Nanoscale** 7, 19250-19258 (2015)
- 54) Use of the oxygen storage material CeO₂ as co-catalyst to improve the performance of microbial fuel cells. I. Singh and Amreesh Chandra. **International Journal of Hydrogen Energy** 41, 1913-1920 (2015)
- 55) Graphene/Nickel Nanofiber Hybrids for Catalytic and Microbial Fuel Cell Applications. B. Kartick, S. K. Srivastava, and Amreesh Chandra **Journal of Nanoscience & Nanotechnology** 16, 303-311 (2015)
- 56) High Electrochemical performance in Asymmetric Supercapacitors using MWCNTs/Nickel Sulfide Composite and Graphene Nanoplatelets as Electrodes. Arvinder Singh, A.J. Roberts, R.C.T. Slade and Amreesh Chandra **Journal of Materials Chemistry A** 2, 16723 - 16730 (2014)
- 57) Effect of oxygen annealing on the multiferroic properties of Ca²⁺ doped BiFeO₃ nanoceramics. P. Tirupath, S. K. Mandal and Amreesh Chandra **Journal of Applied Physics** 116, 244105-244118 (2014)
- 58) Highly Sensitive Large Area Multi-Layered Graphene Based Flexible Ammonia Sensor. R. Ghosh, A. Singh, S. Santra, S.K. Ray, Amreesh Chandra, P.K. Guha. **Sensors & Actuators: B. Chemical** 205, 67-73 (2014)
- 59) Pressure driven ferroelectric to paraelectric transition in Sr doped BaTiO₃. A. Basu, R. Jana, G. Mandal, Amreesh Chandra and G.D. Mukherjee **Journal of Applied Physics** 117, 054102 (2015)
- 60) Anomalous magnetic behavior below 10 K in YCrO₃ nanoparticles obtained under droplet confinement. Inderjeet Singh, K. Lanfester, R. Espi, A.K. Nigam and Amreesh Chandra. **Applied Physics Letters** 103, 182902-182906 (2013)
- 61) Observation of bi-relaxor characteristic in multiferroic 0.70Bi(0.90)Ca(0.10)FeO(3) - 0.30PbTiO(3) ceramics. P. Tirupathi and Amreesh Chandra **Journal of Physics D: Applied Physics** 46, 375304-375311 (2013)
- 62) Need for optimizing catalyst loading for achieving affordable microbial fuel cells. Inderjeet Singh and Amreesh Chandra. **Bioresource Technology** 142,77-81, (2013)
- 63) MnO₂ Nanoparticles as Efficient Catalyst in Fuel Cells. Jatin Khera, Arvinder Singh, Satish K. Mandal, and Amreesh Chandra **Advanced Science, Engineering and Medicine** 5, 1-6 (2013)
- 64) Graphite oxide/polypyrrole composite electrodes for achieving high energy density supercapacitors. Arvinder Singh and Amreesh Chandra **Journal of Applied Electrochemistry** 43, 773-782(2013)

- 65) Nanostructures of Sr(2+) doped BiFeO₃ multifunctional ceramics with tunable photoluminescence and magnetic properties. S.K. Mandal, T. Rakshit, S.K. Ray, S.K. Mishra, P.S.R. Krishna and Amreesh Chandra **Journal of Physics: Condensed Matter** 25, 055303-055315 (2013)
- 66) Graphene and graphite oxide based composites for application in energy systems. Arvinder Singh and Amreesh Chandra **physica status solidi (b)** 250, 1483-1487(2013)
- 67) Stabilization of dielectric anomaly near the magnetic phase transition in Ca²⁺ doped BiFeO₃ multifunctional ceramics. P. Tirupathi and Amreesh Chandra. **Journal of Alloys and Compounds** 564, 151-157 (2013)
- 68) The Role of Defects in the High Ionic Conductivity of ChoLine Triflate Plastic Crystal Phases and its Acid Containing Compositions. U.A. Rana, R. Vijayaraghava, C.M. Doherty, Amreesh Chandra, Jim Efthimiadis, A.J. Hill, D.R. MacFarlane and Maria Forsyth **Journal of Physical Chemistry A** 117, 5532-5543 (2013)
- 69) First principle study on structural, elastic and electronic properties of cubic BiFeO₃. M.K. Yaakob, M.F.M.Taib, M.S.M.Deni, Amreesh Chandra, L. Lud, M.Z.A.Yahya. **Ceramic International** 39, S283-S286 (2013)
- 70) Grain and grain boundary effects in Ca²⁺ doped BiFeO₃ multiferroic ceramics. P. Tirupathi and Amreesh Chandra **physica status solidi (b)** 249, 1639 (2012)
- 71) Dielectric relaxation studies of low thermal expansion polymer composites. Amreesh Chandra and W.H. Meyer. **Journal of Applied Polymer Science** 128, 2857 – 2864 (2012)
- 72) Reappearance of ferroelectric soft modes in the paraelectric phase of (Pb,Ca)TiO₃ at high pressures: Raman and X-ray diffraction studies. A. Basu, Amreesh Chandra, A.K. Tyagi, G.D. Mukherjee. **Journal of Physics: Condensed Matter** 24, 115404-115411 (2012)
- 73) A comparative study of arc discharge and chemical vapor. Ghanshyam Tripathi, Balram Tripathi, M.K. Sharma, Y.K. Vijay, Amreesh Chandra, I.P. Jain. **International Journal of Hydrogen Energy** 37, 3833-3838 (2012)
- 74) Supercapacitors: An Alternate Technology for Energy Storage. Amreesh Chandra. **Proceedings of the National Academy of Sciences, India Section A: Physical Sciences** 82, 79-90 (2012)
- 75) Microbial Fuel Cells: Recent Trends. J. Khera and Amreesh Chandra. **Proceedings of the National Academy of Sciences, India Section A: Physical Sciences** 82, 31-41 (2012)
- 76) Orientation studies in MWNT / PMMA Nanocomposites. G.Tripathi, B. Tripathi, Y. K. Vijay, Amreesh Chandra, M.K. Sharma **International Journal of Chemical Science** 9, 1725-1730 (2011)
- 77) Phase Transition in disordered Ferroelectric Ceramic Pb(0.70)Ca(0.30) TiO₃ under pressure. Amreesh Chandra, A.K.Tyagi, G.D. Mukherjee, R. Boehler. **Journal of Electroceramics** 26,191-199 (2011)
- 78) Nanostructured oxides for energy storage applications in supercapacitors and batteries. Amreesh Chandra, A.J. Roberts, E.L.H. Yee and R.C. T. Slade. **Pure and Applied Chemistry** 81 1489, (2010)
- 79) P-V-T measurements on PMM:PbTiO₃ polymer-ceramic composites with tunable thermal expansion. Amreesh Chandra, A.Best, W.H. Meyer and G. Wegner. **Journal of Applied Polymer Science** 26, 2663 (2009)
- 80) Nanostructured vanadium oxide based systems: Their applications in supercapacitors. Amreesh Chandra, A.J. Roberts and R.C. T. Slade **International Journal of Nanotechnology** 7, 861 - 869 (2009)
- 81) Activated carbon cloth anode for sulfate removal and sulfur recovery in a microbial fuel cell. F. Zhao, N. Rahunen, J. Varcoe, Amreesh Chandra, C.A.Rossa and R.C.T. Slade. **Environmental Science and Technology** 42, 4971-4976 (2008)
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