DR. ABHIGYAN DUTTA

CONTACT INFORMATION

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DEPARTMENT OF PHYSICS
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Researcher Id: AAD-3370-2019

EDUCATION

- **Ph. D.** in Materials Science, 2006 from Jadavpur University, Kolkata.
- Title of Thesis: ***Ion dynamics in some heavy metal glasses containing alkaline earth ions***.

Thesis supervisor: **Professor Aswini Ghosh**, ***FNA***; ***FASc***; **J. C. Bose National Fellow,**

School of Physical Sciences, Indian Association for the Cultivation of Science, Jadavpur, INDIA.

- **M. Sc** in **Physics**, 1999, The University of Burdwan, Burdwan, INDIA.
- **B. Sc** in **Physics (H)**, 1997**,** The University of Burdwan, Burdwan, INDIA.

TEACHING

AUGUST, 2021 - present, *Professor* at the Department of Physics, The University of Burdwan

AUGUST 2018 - AUGUST 2021, *Associate Professor* at the Department of Physics, The University of Burdwan

AUGUST 2006 - AUGUST 2018 *Assistant Professor* at the Department of Physics, The University of Burdwan

APRIL 2003 - MARCH 2004, *Lecturer* at Department of Physics, Nabagram Hiralal Paul College, Hooghly

Courses taught:

Theory

(i) Nuclear and Particle Physics (General) in M. Sc Semester II

(ii) Nuclear and Particle Physics (Major Elective) in M. Sc Semester III and IV

(iii) Research methodology in Ph. D course work.

Laboratory:

(i) G.M. counter-based experiment in Semesters I and II.

(ii) Beta ray absorption and determination of mass absorption co-efficient in Semesters III and IV

(iii) Determination of speed of the ultrasonic wave in liquid medium in Semesters III and IV.

RESEARCH INTEREST

- Synthesis of different doped Rare earth, Ferrite, and heavy metal-based nanomaterials by various chemical and mechanical routes.
- Microstructural investigation of nanomaterials using XRD and Rietveld method, HR-TEM, FE-SEM; Proposition of different cationic models
- Study of optical properties using UV-Vis, FT-IR, PL, and Raman Spectroscopy.
- Study of Dielectric and electrical properties of nanomaterials using Impedance spectroscopy.
- Development of solid electrolyte and electrode materials for futuristic IT-SOFC.

RESEARCH GROUP

Dr Sk. Anirban

Dr Sabyasachi Chakrabarty

Dr. Ankurava Sinha

Dr. Swagata Bandopadhyay

Dr Rajdip Roy

Dr. Arunmay Baidya

Mr Sujan Malik

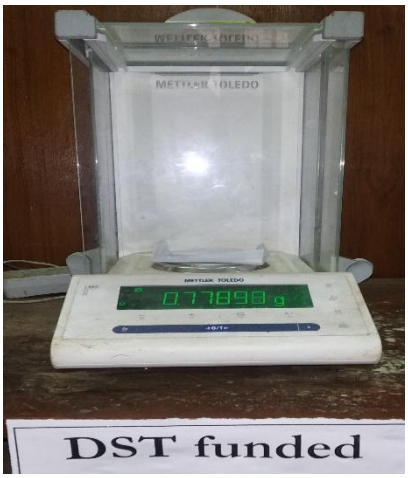
Ms. Gunjan Das

Ms. Pritha Dey

SPONSORED RESEARCH PROJECTS

Sl no.	Name of the Project	Sanctioning authority	Duration	Value
1	DEVELOPMENT OF RARE EARTH DOPED NANOCRYSTALLINE CERIA MATERIALS FOR ELECTRONIC AND OPTICAL APPLICATIONS	Department of Science and Technology (Govt. of India)	December 2011-November 2014	21.96 Lakhs
2	STRUCTURAL AND CHARGE CARRIER DYNAMICS STUDY OF HEAVY METAL OXIDE BASED NANOSTRUCTURES FOR FUTURISTIC ELECTROLYTE APPLICATION IN SOFC	Science and Engineering Research Board (SERB) (Govt. of India)	October 2017-September 2020	21.73 Lakhs

FACILITIES AVAILABLE IN SOLID STATE IONICS LABORATORY



Digital Micro Balance

Centrifuge for synthesis

Fume hood for chemical synthesis

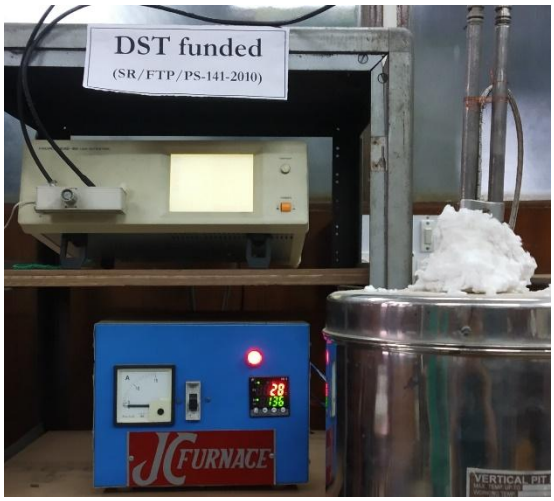
Planetary Ball Mill (Fritsch, P-7)

High temperature muffle furnace

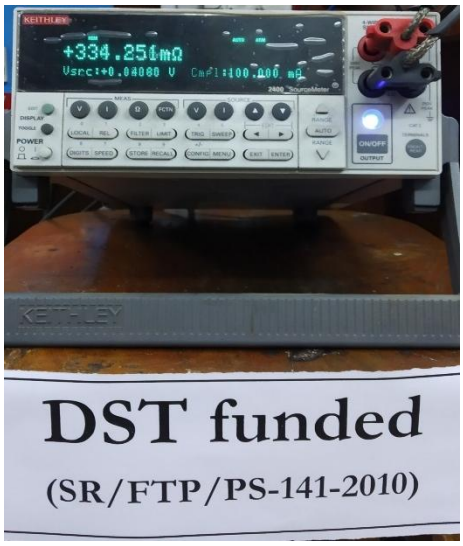
Intermediate temperature tube furnace

Vacuum tube furnace

Tube furnace for high temperature measurement



Impedance Spectroscopy Measurement system (Hioki LCR meter)



Source meter for electronic conductivity measurement (Keithley 2400)

RESEARCH PUBLICATIONS IN SCI JOURNALS

1. Structural and Electrical properties of La^{3+}-doped Scheelite-type Calcium Molybdates: Effect of doping concentration; Gunjan Das and **Abhigyan Dutta**; ***Physica Status Solidi A***; (2025) (**I.F: 1.9**) (**Accepted**)
2. Influence of Ti-substituted hole-doped $La_{1.5}Sr_{0.5}CoMnO_6$ double perovskite on microstructure and electrical transport properties; Ambedkar Kumar Verma; Dev Kumar Mahato; Sujan Malik and **Abhigyan Dutta; *Journal of Materials Science: Materials in Electronics*; 36** (2025) 544 (**I.F: 2.8**) https://doi.org/10.1007/s10854-025-14534-3
3. Structural, Electrical, leakage-current, and Magnetic characteristics of double perovskite Nd_2NiTiO_6, Sujan Malik and **Abhigyan Dutta**; ***Journal of the American Ceramic Society***; **108** (1) (2025) e20150 (**I.F: 3.5**) https://doi.org/10.1111/jace.20150
4. Analyzing Structural Changes and Variable Range Hopping Conduction in $Na_{0.5}Bi_{0.5}TiO_3$ Perovskite: Effect of Sr^{2+} Doping at Bi-site; Rajdip Roy and **Abhigyan Dutta; *Journal of Solid State Chemistry*; 340** (2024) 125023 **(I.F: 3.2)** https://doi.org/10.1016/j.jssc.2024.125023
5. Influence of Ho, Gd, La Doping on Grain-Grain Boundary Characteristics and Minimization of Leakage Current in Nickel Ferrites; Sanchit Kumar, Chaitali Mondal, **Abhigyan Dutta**,

Ankurava Sinha; ***ECS Journal of Solid State Science and Technology*** **13** (2024) 073017 (**I.F: 1.8**) https://doi.org/10.1149/2162-8777/ad6503

6. Exploring Phase Transition and Charge Carrier Dynamics in La_6MoO_{12} Ionic Conductors: Impact of Metal-Substitution; Arunmay Baidya and **Abhigyan Dutta;** ***Materials Research Bulletin*****; 179** (2024) 112968 https://doi.org/10.1016/j.materresbull.2024.112968 (**I.F: 5.3**)
7. Examining the effects of sintering temperature on double perovskite La_2NiTiO_6 Analysis of structural, optical, electrical properties, and leakage current characteristics; Sujan Malik and **Abhigyan Dutta**; ***Journal of Physics and Chemistry of Solids*****; 190** (2024) 112027 https://doi.org/10.1016/j.jpcs.2024.112027 **(I.F: 4.3)**
8. Structural, Optical, and Charge Carrier Dynamics Study of Metal-Doped La_6MoO_{12}- Based Ionic Conductors; Arunmay Baidya and **Abhigyan Dutta;** ***Physica B: Condensed Matter*** **681** (2024) 415853 https://doi.org/10.1016/j.physb.2024.415853 **(I.F: 2.8)**
9. Structural, Optical, Electrical, and Dielectric Relaxation Properties of Rare Earth Containing Sodium Bismuth Titanate $(Na_{0.5}Bi_{0.5}TiO_3)$ Perovskite: Effect of Ionic Radius; Rajdip Roy and **Abhigyan Dutta;** ***Journal of Rare Earths*** **42** (2024) 383-391 https://doi.org/10.1016/j.jre.2023.04.011 **(I.F: 5.2)**
10. Structure, Optical, Charge Transport Mechanism, Dielectric Properties and Leakage Current Analysis of Sm_2MgMnO_6 Double Perovskite; Sk. Anirban, Rajdip Roy and **Abhigyan Dutta;** ***International Journal of Hydrogen Energy*** **50** (2024) 786-804 https://doi.org/10.1016/j.ijhydene.2023.09.034 (**I.F: 8.1)**
11. Understanding the charge career dynamics, improved dielectric properties and leakage current behaviour of $NiFe_{1.85}Dy_{0.15}O_4$ with structural correlation; Chaitali Mondal, Sanchit Kumar, **Abhigyan Dutta**, Ankurava Sinha; ***ECS Journal of Solid State Science and Technology*** **12 (10)** (2023) 103002. https://doi.org/10.1149/2162-8777/acf8f2 **(I.F: 1.8)**
12. Structural Interpretation of Sintering Temperature Effect on Optical and Electrical Properties of Pr^{3+} substituted Nickel ferrites; Chaitali Mondal, **Abhigyan Dutta** and Ankurava Sinha; ***Physica Status Solidi A;*** (2023) 2300263 https://doi.org/10.1002/pssa.202300263 **(I.F: 1.9)**.
13. Structural, electrical and leakage current behavior of double perovskite Gd_2NiTiO_6; Sujan Malik and **Abhigyan Dutta**; ***International Journal of Hydrogen Energy,*** **48** (37)**(2023)** 14012, https://doi.org/10.1016/j.ijhydene.2022.12.320 (**I.F: 8.1)**

14. Microstructure, Charge Carrier Conduction Mechanism Model, Dielectric Properties and Leakage Current Analysis of Dy_2FeMnO_6 Nanomaterial, Sk. Anirban, Rajdip Roy and **Abhigyan Dutta;** ***Ceramics International*****; 49** (2023) 12334. https://dx.doi.org/10.1016/j.ceramint.2022.12.091 (**I.F: 5.1**)

15. Structural and Charge Carrier Dynamics Study of Dy stabilized La_6MoO_{12} Ionic Conductors; Arunmay Baidya and **Abhigyan Dutta;** ***Materials Research Bulletin*****; 160** (2023) 112114, https://doi.org/10.1016/j.materresbull.2022.112114 (**I.F: 5.3**)

16. Structural Phase Transition and Charge Carrier Dynamics in Dy Containing La_6MoO_{12} Ionic Conductor; Arunmay Baidya and **Abhigyan Dutta;** ***Solid State Sciences;*** **134** (2022) 107061, https://doi.org/10.1016/j.solidstatesciences.2022.107061 (**I.F: 3.4**).

17. Structure, Charge Carrier Conduction, Dielectric Properties, and Leakage Current Density of Dy_2CoMnO_6 Double Perovskite; Sk. Anirban, Rajdip Roy and **Abhigyan Dutta;** ***Journal of Alloys and Compounds*****; 928** (2022) 167184, https://doi.org/10.1016/j.jallcom.2022.167184 **(I.F: 5.8)**

18. Synthesis Structural and Anti-microbial Characterization of Nanostructured Doped Tin Oxide; A.M. Roychaudhury, Utsa Debnath, Sujay Munshi, Goutam Kumar Basak, **Abhigyan Dutta**, S. Masanta, Achintya Singha, Aritra Banerjee, Debtanu Ghosh, Partha Chatterjee, and Apurba Kanti Deb; ***Journal of Theoretical and Applied Physics;*** **16 (1)** (2022) 162202 (1-8), http://dx.doi.org/10.30495/jtap.162202 **(I.F: XXXX)**

19. Impact of dielectric properties on ionic conductivity of $Ce_{0.9}Sm_{0.1}O_{1.95}$ via defect interaction; Sk. Anirban and **Abhigyan Dutta;** ***Materials Letters X*****; 12** (2021) 100111, https://doi.org/10.1016/j.mlblux.2021.100111 **(I.F: 2.2)**

20. Structure, Small Polaron Hopping Conduction and Relaxor Behavior of Gd_2NiMnO_6 Double Perovskite; Sk. Anirban and **Abhigyan Dutta;** ***Journal of Physics and Chemistry of Solids*****; 159** (2021) 110292, https://doi.org/10.1016/j.jpcs.2021.110292 **(I.F: 4.3)**

21. Structure, Ionic Transport Properties and Ion Dynamics of $Ce_{0.8}Y_{0.2}O_{1.9}$ Oxygen Ion Conductor: Understanding the Impact of Sintering Temperature; Sk. Anirban and **Abhigyan Dutta;** ***Journal of Solid State Chemistry*****; 303** (2021) 122451, https://doi.org/10.1016/j.jssc.2021.122451 **(I.F: 3.2)**

22. Structural, Electrical, and Dielectric Properties of Chemically Derived Sm Doped Cubic Lanthanum Molybdate Nanomaterials; Arunmay Baidya and **Abhigyan Dutta;** ***Journal of Physics***

***and Chemistry of Solids*; 159** (2021) 110272, https://doi.org/10.1016/j.jpcs.2021.110272 **(I.F: 4.3)**

23. Structure, Conductivity, Dielectric Properties, and Charge Carrier Dynamics of Lead Free Dy_2NiMnO_6 Double Perovskite; Sk. Anirban and **Abhigyan Dutta; *Journal of Materials Science: Materials in Electronics*, 32** (2021) 17822-17836, https://doi.org/10.1007/s10854-021-06318-2 (**I.F: 2.8**)

24. Understanding the Structure and Charge Transport Mechanism of Sm_2NiMnO_6 Double Perovskite Prepared Via Low Temperature Auto-ignition Method; Sk. Anirban and **Abhigyan Dutta**; ***Physics Letters A* 397** (2021) 127256, https://doi.org/10.1016/j.physleta.2021.127256 (**I.F: 2.3**)

25. Effect of Vanadium Doping on the Electrical Charge Transport and Dielectric Relaxation Properties of Sodium Bismuth Titanate Perovskite; Rajdip Roy and **Abhigyan Dutta; *Ceramics International*; 47** (2021) 15732-15742, https://doi.org/10.1016/j.ceramint.2021.02.145 (**I.F: 5.1**)

26. Sol-Gel Derived Cobalt Containing Ni-Zn Ferrite Nanoparticles: Dielectric Relaxation and Enhanced Magnetic Property Study; S. Chakrabarty, Swagata Bandyopadhyay, M. Pal and **Abhigyan Dutta**; ***Materials Chemistry and Physics*; 259** (2021) 124193, https://doi.org/10.1016/j.matchemphys.2020.124193 **(I.F: 4.3)**

27. Synthesis Route Dependent Structure, Conductivity and Dielectric Properties of $Ce_{0.8}Gd_{0.2}O_{1.9}$ Oxygen Ion Conductor: A Comparative Approach; Sk. Anirban, Anindita Banerjee and **Abhigyan Dutta**; ***International Journal of Hydrogen Energy,* 46** (2021) 8210-8225, https://doi.org/10.1016/j.ijhydene.2020.12.010 (**I.F: 8.1**)

28. Electrical and photocatalytic properties of composites of manganese and titanium oxides; Bharati Debi Biswas, Joydeep Datta, Moushumi Dutta Purkayastha, Dhananjoy Das, Partha Pratim Ray, **Abhigyan Dutta**, Tapas Pal Majumder; ***Surfaces and Interfaces;* 20** (2020) 100606, https://doi.org/10.1016/j.surfin.2020.100606 (**I.F: 5.7**)

29. Revisiting Ionic Conductivity of Rare Earth Doped Ceria: Dependency on Different Factors; Sk. Anirban and **Abhigyan Dutta**; ***International Journal of Hydrogen Energy*; 45** (2020) 25139-25166, https://doi.org/10.1016/j.ijhydene.2020.06.119 (**I.F: 8.1**) (Review article)

30. Structural, Optical and Enhanced Electrical Properties of Vanadium Alloyed Sodium Bismuth Titanate Solid Solution Synthesized by a Chemical-Mechanical Hybrid Method; Rajdip Roy and

Abhigyan Dutta; *Journal of Alloys and Compounds*; 843 (2020) 155999, https://doi.org/10.1016/j.jallcom.2020.155999 **(I.F: 5.8)**

31. Structural, Optical and Electrical Transport Properties of Some Rare-Earth-Doped Nickel Ferrites: A Study on Effect of Ionic Radii of Dopants; Ankurava Sinha and **Abhigyan Dutta**; ***Journal of Physics and Chemistry of Solids*; 145** (2020) 109534, https://doi.org/10.1016/j.jpcs.2020.109534 **(I.F: 4.3)**

32. Study of microstructure and electrical conduction mechanisms of quaternary semiconducting glassy systems: Effect of mixed modifiers; Dipankar Biswas, Anindya Sundar Das, Rittwick Mondal, Anindita Banerjee, Debalina Deb, **Abhigyan Dutta**, Subhratanu Bhattacharya, Soumyajyoti Kabi, Loitongbam Surajkumar Singh; ***Journal of Non-Crystalline Solids***; **542** (2020) 120104, https://doi.org/10.1016/j.jnoncrysol.2020.120104 **(I.F: 3.2)**

33. Structural properties and electrical conductivity mechanisms of semiconducting quaternary nanocomposites: Effect of two transition metal oxides; Dipankar Biswas, Anindya Sundar Das, Rittwick Mondal, Anindita Banerjee, **Abhigyan Dutta**, Soumyajyoti Kabi, Debasish Roy, Loitongbam Singh; ***Journal of Physics and Chemistry of Solids***; **144** (2020) 109505, https://doi.org/10.1016/j.jpcs.2020.109505 **(I.F: 4.3)**.

34. Microstructure Correlated Ion Transport Mechanism of Sol-Gel derived Sodium Bismuth Titanate Oxide Ion Conductors; Rajdip Roy and **Abhigyan Dutta; *Solid State Sciences;* 102** (2020) 106174, https://doi.org/10.1016/j.solidstatesciences.2020.106174 (**I.F: 3.4**)

35. Effect of sintering on the structure, microstructure and electrical properties of mechanosynthesized Y_2O_3 and Dy_2O_3 alloyed ceria nanoparticles: a comparative study; S. Dutta, S Bandyopadhyay, **A. Dutta** and S. K. Pradhan; ***Materials Research Bulletin;* 120** (2019) 110582, https://doi.org/10.1016/j.materresbull.2019.110582 **(I.F: 5.3)**.

36. Microscopic length scale of charge transport and structural properties of cobalt doped Ni-Zn ferrite nanocrystals: A structure property correlation study; S. Chakrabarty, Swagata Bandyopadhyay, **Abhigyan Dutta** and M. Pal; ***Materials Chemistry and Physics***; **233** (2019) 310-318, https://doi.org/10.1016/j.matchemphys.2019.05.061 **(I.F: 4.3)**

37. Optical and Ionic Transport Mechanism in γ-Phase Stabilized Nanostructured Bi-Ce-O Ionic Conductors: A Structure-Property Correlation Study; Swagata Bandyopadhyay and **Abhigyan Dutta**; ***Ionics*; 25** (2019) 2873-2886, https://doi.org/10.1007/s11581-018-2750-9 (**I.F: 2.4**)

38. Effect of Divalent Cation Addition on Structure, Conductivity and Grain Boundary Properties in La Doped Ceria Oxygen Ion Conductors**;** Sk. Anirban, Proloy T Das and **Abhigyan Dutta; *Ceramics International*; 45** (2019) 5751-5760, https://doi.org/10.1016/j.ceramint.2018.12.041 **(I.F: 5.1)**.

39. Structure, Ionic Transport Properties and Scaling Behavior of Eu, Pr and Sm Co-doped Ceria Oxygen Ion Conductors**;** Sk. Anirban and **Abhigyan Dutta**; ***Physica Status Solidi A;* 216** (2) (2019) 1800352, https://doi.org/10.1002/pssa.201800352 **(I.F: 1.9)**

40. Structure and Defect Interaction Mediated Transport Mechanism of Mixed Di-Tri Valent Cation Containing Ceria-Based Ionic Conductors; Sk. Anirban and **Abhigyan Dutta; *International Journal of Hydrogen Energy*; 43** (2018) 23418-23429, https://doi.org/10.1016/j.ijhydene.2018.10.219 **(I.F: 8.1)**

41. An Insight into the Structure, Conductivity and Ion Dynamics of Sr-Sm Co-Doped Ceria Oxygen Ion Conductors: Effect of Defect Interaction; Sk. Anirban and **Abhigyan Dutta; *Solid State Sciences;* 86** (2018) 69-76, https://doi.org/10.1016/j.solidstatesciences.2018.10.007 **(I.F: 3.4)**

42. Mechanosynthesis of Nanocrystalline Fully Stabilized Bcc γ-phase of Bi_2O_3 without Any Additive: Manifestation of Ferroelasticity in Microstructure, Optical and Transport Properties; Swagata Bandyopadhyay, Sidhhartha Dutta, **Abhigyan Dutta** and S. K. Pradhan; ***Crystal Growth and Design;* 18** (11) (2018) 6564-6572, https://doi.org/10.1021/acs.cgd.8b00768 **(I.F: 3.2)**

43. Tailoring of microstructure, magnetic properties and charge carrier dynamics of YIG nanoparticles by Gd doping, S. Chakrabarty, A. Sinha, **A. Dutta,** and M. Pal**; *Journal of Magnetism and Magnetic Materials;* 468** (2018) 215-223, https://doi.org/10.1016/j.jmmm.2018.08.004 **(I.F: 2.5)**

44. Yttrium Doped Cobalt Ferrite Nanoparticles: Study of Dielectric relaxation and Charge Carrier Dynamics; S. Chakrabarty, M. Pal and **A. Dutta; *Ceramics International;* 44** (2018) 14652-14659, https://doi.org/10.1016/j.ceramint.2018.05.091 **(I.F: 5.1)**.

45. Effect of yttrium doping on structure, magnetic and electrical properties of nanocrystalline cobalt ferrite; S. Chakrabarty, **A. Dutta** and M. Pal**; *Journal of Magnetism and Magnetic Materials;* 461** (2018) 69-75, https://doi.org/10.1016/j.jmmm.2018.04.051 **(I.F: 2.5)**

46. A Structural Insight into the Electrical Properties of Dy-Ho co - doped Phase Stabilized Bismuth Oxide Based Electrolytes; Swagata Bandyopadhyay and **Abhigyan Dutta**; ***Journal of***

Electroanalytical Chemistry; **817** (2018) 55-64, https://doi.org/10.1016/j.jelechem.2018.03.063 **(I.F: 4.1)**

47. One step synthesized In_2O_3 alloyed CeO_2 nanoparticles: Microstructure, phase stability investigation and charge transport properties; S. Dutta, S Bandyopadhyay, S. Sain, **A. Dutta** and S. K. Pradhan; ***Journal of Alloys and Compounds***; **749** (2018) 724-733, https://doi.org/10.1016/j.jallcom.2018.03.270 (**I.F: 5.8**)

48. Structural Interpretation of Ionic Transport and Small Polaron Hopping Conduction in Gd Substituted Nickel Nanoferrites; Ankurava Sinha and **Abhigyan Dutta**; ***Physica Status Solidi A;*** **215** (11)(2018) 1700908 (1-8), https://doi.org/10.1002/pssa.201700908 **(I.F: 1.9)**

49. Structural and ionic transport mechanism of rare earth doped cerium oxide nanomaterials: Effect of ionic radius of dopant cations; Sk. Anirban and **Abhigyan Dutta**; ***Solid State Ionics;*** **309** (2017)137-145, https://doi.org/10.1016/j.ssi.2017.07.020 **(I.F: 3.0)**

50. Microstructure and electrical transport phenomenon of yttria alloyed nanocrystalline ceria solid solution synthesized by mechanical alloying; S. Dutta, S Bandyopadhyay, **A. Dutta** and S. K. Pradhan; ***Materials Research Bulletin;*** **93** (2017) 333-341, https://doi.org/10.1016/j.materresbull.2017.05.028 **(I.F: 5.4)**.

51. Electrical relaxation studies and ac conductivity of one step synthesized dysprosium alloyed ceria nanoparticles; S. Dutta, G. Maity, **A. Dutta** and S. K. Pradhan; **Invertis Journal of Science and Technology**; **10**(3) (2017) 1-5, http://dx.doi.org/10.5958/2454-762X.2017.00020.8

52. Microstructural interpretation of conductivity and dielectric response of $Ce_{0.9}Eu_{0.1}O_{1.95}$ oxygen ion conductors; Sk. Anirban and **Abhigyan Dutta;** ***Ionics*****; 23** (10) (2017) 2579-2587, https://doi.org/10.1007/s11581-017-2066-1 **(I.F: 2.4)**

53. Microstructure correlated electrical conductivity of Manganese alloyed nanocrystalline cubic zirconia synthesized by mechanical alloying; Anshuman Nandy, **A. Dutta** and S. K. Pradhan; ***Advanced Powder Technology*****; 28** (2017) 618-628, https://doi.org/10.1016/j.apt.2016.11.014 **(I.F: 4.2)**

54. Thermal, Optical and Dielectric Response of Phase Stabilized δ–Dy-Bi_2O_3 Ionic Conductors; Swagata Bandyopadhyay and **Abhigyan Dutta;** ***Journal of Physics and Chemistry of Solids*****; 102** (2017) 12-20, https://doi.org/10.1016/j.jpcs.2016.11.001 **(I.F: 4.3)**

55. Structural interpretation of optical properties and ion transport mechanism in mixed valent Pr containing nanoceria; Sk. Anirban and **Abhigyan Dutta**; ***Materials Research Bulletin;*** **86** (2017)119-130, https://doi.org/10.1016/j.materresbull.2016.10.015 **(I.F: 5.3)**

56. Microstructure and charge carrier dynamics in Pr-Sm-Eu triple-doped nanoceria; Sk. Anirban and **Abhigyan Dutta**; ***Solid State Ionics;*** **295** (2016)48-56, https://doi.org/10.1016/j.ssi.2016.07.008 **(I.F: 3.0)**

57. Dielectric Relaxation and Charge carrier mechanism in nanocrystalline Ce-Dy ionic conductors; Sk. Anirban and **Abhigyan Dutta**; ***RSC Advances;*** **6** (2016) 49852-49861, https://doi.org/10.1039/C6RA06654B **(I.F: 3.9)**

58. Microstructural interpretation of vibrational properties and ionic transport mechanism in Dy stabilized δ-Bi_2O_3; Swagata Bandyopadhyay and **Abhigyan Dutta;** ***Journal of Alloys and Compounds*****; 682** (2016) 80-88, https://doi.org/10.1016/j.jallcom.2016.04.256 **(I.F: 5.8)**

59. Structure and microstructure dependent ionic conductivity in 10mol% Dy_2O_3 doped CeO_2 nanoparticles synthesized by mechanical alloying; S. Dutta, A. Nandy, **A. Dutta** and S. K. Pradhan; ***Materials Research Bulletin*****; 73** (2016) 446-451, https://doi.org/10.1016/j.materresbull.2015.09.029 **(I.F: 5.3)**

60. Enhanced magnetic properties of Mn-Ni co-doped cobalt ferrite nanoparticles corroborated with microstructural analysis; S. Chakrabarty, M. Pal and **A. Dutta;** ***Advanced Science Letters*****; 22** (2016) 89-94, https://doi.org/10.1166/asl.2016.6797 **(I.F: 0.600)**

61. Microstructure evolution, dielectric relaxation and scaling behavior of Dy-for-Fe substituted Ni-nanoferrites; Ankurava Sinha and **Abhigyan Dutta**; ***RSC Advances*****; 5** (2015) 100330-100338, https://doi.org/10.1039/C5RA14783B **(I.F: 3.9)**

62. Charge carrier dynamics in Gd-Y co-doped nanocrystalline ceria corroborated with defect interactions; Sk. Anirban and **Abhigyan Dutta;** ***RSC Advances*****; 5** (2015) 95736-95743, https://doi.org/10.1039/C5RA20251E **(I.F: 3.9)**

63. Effect of Mn and Ni codoping on ion dynamics of nanocrystalline cobalt ferrite: A Structure property correlation study; S. Chakrabarty, **A. Dutta** and M. Pal; ***Electrochimica Acta*****; 184** (2015) 70-79, https://doi.org/10.1016/j.electacta.2015.10.027 **(I.F: 5.5)**

64. Microstructure and Charge Carrier Dynamics in Dy substituted phase stabilized cubic Bi_2O_3, Swagata Bandyopadhyay and **Abhigyan Dutta**; ***RSC Advances*****; 5** (2015) 65123-65132, https://doi.org/10.1039/C5RA10318E **(I.F: 3.9)**

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