

List of Publication

Publication in SCI and peer - reviewed journals

1. Nayan Biswas, Deepra Bhattacharya, Manoj Kumar, **Jayanta Mukhopadhyay**, Rajendra N. Basu, and Prasanta K Das “Effect of Oxygen Diffusion Constraints on the Performance of Planar Solid Oxide Fuel Cells for Variable Oxygen Concentration”- Under Revision - **Industrial & Engineering Chemistry Research** (2020).
2. Anode supported SOFC fabricated with functional anode: Role of variation of fuel and oxidants Madhumita Mukhopadhyay, Abhijit Das Sharma and **Jayanta Mukhopadhyay***, **Journal of Physics**, **1579** (2020) **012001**, doi:10.1088/1742-6596/1579/1/012001
3. Sanchari Dasgupta, Madhumita Mukhopadhyay, Debasis Das and **Jayanta Mukhopadhyay***. “Evaluation of functionality in Ni@stabilized ZrO₂ and NiO @ NiO–Zn through X-ray diffraction technique”. **Materials Chemistry & Physics**. **252**, 123112 (1-15) (2020).
4. Shoroshi Dey, Debasmita Choudhury, Mayuri Choudhuri, **Jayanta Mukhopadhyay***, Abhijit Das Sharma and Madhumita Mukhopadhyay, “Facile Synthesis of Doped Ceria-Based Oxide by Co-Precipitation Technique and Performance Evaluation in Solid Oxide Fuel.” **International Journal of Applied Ceramic Technology**, **17**, 1769-1784 (2020).
5. Shoroshi Dey, **Jayanta Mukhopadhyay***, Raja Kishora Lenka, Pankaj Kumar Patro, Abhijit Das Sharma, Tarasankar Mahata and Rajendra N. Basu, “Synthesis and Characterization of Nanocrystalline Ba_{0.6}Sr_{0.4}Co_{0.8}Fe_{0.2}O₃ for Application as an Efficient Anode in Solid Oxide Electrolyser Cell”. **International Journal of Hydrogen Energy**, **45**, 3995-4007 (2020)
6. Rajendra N. Basu, **Jayanta Mukhopadhyay**, Srabanti Ghosh and Abhijit Das Sharma, “Solid State Electrolytes and Electrode Materials for Fuel Cell Application”, **Transaction of Indian Institute of Metals**, **72** (8) 2073-2090 (2019)
7. Mayuri Choudhuri, Debasmita Choudhury, **Jayanta Mukhopadhyay*** and M. Mukhopadhyay*, “Influence of SiO₂ Filler on the Property Enhancement and Endurance of Poly [Ethylene Oxide]-Salt Composite”, **Macromolecular Symposia**, **388**, 1900031-1-10 (2019).
8. Deepra Bhattacharya, **Jayanta Mukhopadhyay***, Nayan Biswas, Rajendra Nath Basu and Prasanta Kumar Das, “Performance evaluation of different bipolar plate designs of 3D planar anode-supported SOFCs” **International Journal of Heat and Mass Transfer**, **123**, 382-396 (2018)
9. Koyel Banerjee Ghosh, **Jayanta Mukhopadhyay***, Rajendra N. Basu, “La_{0.54}Sr_{0.4}Fe_{0.2}Co_{0.8}O_{3-δ} @Co_{0.01}Ce_{0.79}Gd_{0.2}O_{2-δ} Functional Cathode Material for Solid Oxide Fuel Cell Application” **International Journal of Hydrogen Energy** **42** (4), 2327-2337 (2017)
10. Koyel Banerjee Ghosh, **Jayanta Mukhopadhyay***, Rajendra N. Basu, “Functionally graded doped lanthanum cobalt ferrite and ceria-based composite interlayers for advancing the performance stability in solid oxide fuel cell” **Journal of Power Sources** **328**, 15-27, (2016)

11. Rajashree Konar, **Jayanta Mukhopadhyay***, Abhijit Das Sharma and Rajendra Nath Basu, "Synthesis of Cu-YSZ and Ni-Cu-YSZ Cermets by a Novel Electroless Technique for use as Solid Oxide Fuel Cell Anode: Application Potentiality towards Fuel Flexibility in Biogas Atmosphere" **International Journal of Hydrogen Energy**, **41**, 1151 - 1160 (2016)
12. Koyel Banerjee, **Jayanta Mukhopadhyay*** and R.N. Basu, "Effect of 'A'-site Non Stoichiometry in Strontium Doped Lanthanum Ferrite Based Solid Oxide Fuel Cell Cathodes"- **Materials Research Bulletin**, **72** 306–315 (2015).
13. Koyel Banerjee, **Jayanta Mukhopadhyay*** and R.N. Basu, "Effect of Nanocrystalline Perovskite-Based Cathode Compositions on SOFC Performance: An Aspect of Cell Stability with Composite Interlayer" **Electrochemical Society Transactions, The Electrochemical Society**, **68(1)** 1837-1848 (2015).
14. Koyel Banerjee, **Jayanta Mukhopadhyay*** and R.N. Basu, "Nanocrystalline Doped Lanthanum Cobalt Ferrite and Lanthanum Iron Cobaltite-based Composite Cathode for Significant Augmentation of Electrochemical Performance in Solid Oxide Fuel Cell", **International Journal of Hydrogen Energy** **39**, (28), 15754-15759, (2014).
15. **Jayanta Mukhopadhyay** and R.N. Basu, "Morphologically Architected Spray Pyrolysed Lanthanum Ferrite-based Cathodes - A Phenomenal Enhancement in Solid Oxide Fuel Cell Performance", **Journal of Power Sources**, **252**, 252-263 (2014).
16. Madhumita Mukhopadhyay, **Jayanta Mukhopadhyay** and RN Basu, "A Topical Review on Functional Anode for Solid Oxide Fuel Cell", **Transaction Indian Ceramic Society**, vol. **72**, no. **3**, pp. 145-168 (2013).
17. **Jayanta Mukhopadhyay** and R.N. Basu, "Spray Pyrolysis Assisted Synthesis of Doped Barium Ferrite and Lanthanum Barium Ferrite based SOFC Cathodes with Tailored Particulate Size and Morphology", **Electrochemical Society Transactions, The Electrochemical Society**, **57 (1)**, 1945-1955 (2013).
18. **J. Mukhopadhyay**, H.S. Maiti and R.N. Basu, "Processing of Nano to Micro Particulates with Controlled Morphology by a Novel Spray Pyrolysis Technique: A Mathematical Approach to Understand the Process Mechanism" **Powder Technology**, **239**, 506-517 (2013).
19. **J. Mukhopadhyay**, H.S. Maiti and R.N. Basu, "Synthesis of nanocrystalline lanthanum manganite with tailored particulate size and morphology using a novel spray pyrolysis technique for application as the functional solid oxide fuel cell cathode", **Journal of Power Sources**, **232**, 55-65 (2013)
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22. Bhaskar Prasad Saha, **Jayanta Mukhopadhyay** and Roy Johnson, “The comparative nano particle size characterization of EEW alumina using various measurement techniques”, **Particulate Science & Technology**, **30** (6), 517-532 (2012)
23. Madhumita Mukhopadhyay, **J. Mukhopadhyay**, A. Das Sharma, R.N. Basu, “High performance planar solid oxide fuel cell fabricated with Ni-yttria stabilized zirconia anode prepared by electroless technique”, *International Journal of Applied Ceramic Technology*, **Accepted for publication** **9** (6) 999–1010 (2012).
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25. Madhumita Mukhopadhyay, J. Mukhopadhyay, A. Das Sharma and R.N. Basu, “Multilayered SOFC anode structure with electroless Ni-YSZ for enhancement of cell performance”, **Electrochem. Soc. Transaction**, **35** (1), 1293-1302 (2011), **The Electrochemical Society**.
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27. Madhumita Mukhopadhyay, **J. Mukhopadhyay**, Das Sharma, A. and Basu, R.N: “Use of Electroless Anode-active Layer in Anodes-supported SOFC”, **ECS Transaction**, **25** (2) 2287-2294 (2009), **The Electrochemical Society**.
28. Madhumita Mukhopadhyay, **J. Mukhopadhyay**, Das Sharma, A. and Basu, R.N: Ball mill assisted synthesis of Ni-YSZ cermet anode by electroless technique & their characterization- **Materials Science & Engineering – B**, **163**, 120-127(2009)
29. **Jayanta Mukhopadhyay**, Madhumita Banerjee and Rajendra N. Basu “Influence of Sorption Kinetics for Zirconia Sensitization in Solid Oxide Fuel Cell Functional Anode Prepared by Electroless Technique” **Journal of Power Sources** **175**, 749–759, (2008).
30. **J. Mukhopadhyay**, M. Banerjee, A. Das Sharma, R.N. Basu and H.S. Maiti, “Development of Functional SOFC Anode”, **ECS Transaction**, **7** (1) 1563-1572 (2007), **The Electrochemical Society**.
31. A Dutta, **J. Mukhopadhyay** and R.N. Basu, “Combustion synthesis & characterization of LSCF-based materials as cathode of intermediate temperature solid oxide fuel cells” **J. Eur. Ceram. Soc.** **29**, 2003–2011(2009).

32. P. Pal, M.W. Raja, **J. Mukhopadhyay**, A. Dutta, S. Mahanty, R.N. Basu and H.S. Maiti, "Alanine Assisted Low-Temperature Synthesis and Characterization of Nanocrystalline SOFC Cathodes", **ECS Transaction**, **7 (1) 1129-1138 (2007)**, **The Electrochemical Society**.
33. R.N. Basu, A. Das Sharma, A. Dutta and **J. Mukhopadhyay**, "Processing of High Performance Anode-supported Planar Solid Oxide Fuel Cell", **International Journal of Hydrogen Energy** **33[20], 5748-5754**.
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Publication in Conference Proceedings

1. Madhumita Mukhopadhyay, Abhra Giri, Subir K. Patla, **Jayanta Mukhopadhyay**, Ruma Ray and Sujata Tarafdar, "Evaluation of Porosity for Gamma Irradiated Poly (ethylene oxide): A New Approach Using Microscopic Image Aided with Computer Programming", IEEE Kolkata Section Conference on **Advances in Medical Physics and Healthcare Engineering**, **Adamas University, 22-26 September 2020**
2. Madhumita Mukhopadhyay, Anwita Sarkar, Soumyaditya Sutradhar, Debasreeta Bose & **Jayanta Mukhopadhyay**, "Study on the Performance Evaluation of Solid-State Devices: A Case study Using Functional Polymer and Metal-Ceramic Composite Materials." International Conference on Advances in Material Science and Chemistry ICAMSC-2020, 10th -12th August 2020, Department of Chemistry, Amrita Vishwa Vidyapeetham, Amritapuri Kerala, India.
3. Madhumita Mukhopadhyay, **Jayanta Mukhopadhyay** and A. Das Sharma. "Study on the Role of Oxygen Containing Species towards Performance Evaluation of Planar Anode Supported SOFC." 2nd National Conference on Frontiers in Modern Physics, NCFMP-2020, 6-7th February 2020 in Adamas University, Barasat, Kolkata.
4. Debasmita Choudhury, Mayuri Choudhuri, **Jayanta Mukhopadhyay** and Madhumita Mukhopadhyay; "Synthesis of doped Ceria-based oxides by Co- precipitation and Application in High Temperature Fuel Cell." National Seminar on Physics at Surfaces and Interfaces of Soft Materials (PSISM-2019). 26th-27th September 2019. Condensed Matter Physics Research Centre, Physics Department. Jadavpur University. Kolkata – 700032
5. Mayuri Choudhuri, Debasmita Choudhury, Soumyaditya Sutradhar, **Jayanta Mukhopadhyay** and Madhumita Mukhopadhyay; "Synthesis of Off Stoichiometric Strontium Ferrite Oxides by Combustion Synthesis and Application in Solid Oxide Fuel Cell" National Conference on Current Challenges & Opportunities in Chemical Sciences (CCOCS 2019). August 8th 2019. Department of Chemistry, Aliah University, Kolkata – 700160, India
6. Mayuri Choudhuri, Debasmita Choudhury, **Jayanta Mukhopadhyay**, Soumyaditya Sutradhar and Madhumita Mukhopadhyay; "Synthesis of $\text{La}_{1-x}\text{Sr}_x\text{Co}_y\text{Fe}_{1-y}\text{O}_3$ Perovskite

- Oxides Through Soft Chemical Route and Performance Evaluation In Fuel Cell” International Conference on Science and Engineering Materials (ICSEM 2019). July 19-21st 2019. School of Basic Science and Research, Sharda University, Greater Noida, New Delhi, India.
7. Debasmita Choudhury, Mayuri Choudhuri, **Jayanta Mukhopadhyay** and Madhumita Mukhopadhyay; “Facile synthesis of doped Ceria based oxides by hydroxide co-precipitation.” International Conference on Science and Engineering Materials (ICSEM 2019). July 19-21st 2019. School of Basic Science and Research, Sharda University, Greater Noida, New Delhi, India.
 8. Mayuri Choudhury, Debasmita Choudhuri, Subir K. Patla, **Jayanta Mukhopadhyay**, Madhumita Mukhopadhyay and Ruma Ray. “Influence of SiO₂ Filler on the Property Enhancement of Poly [Ethylene Oxide]-Salt Composite”. National Conference on Exotic Materials and Devices (NCEMD-2019). January 8th-9th 2019. Department of Physics (MMV), Banaras Hindu University, Varanasi – 221005.
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 10. Md. Rashid, S.N. Maity, A Das Sharma, **Jayanta Mukhopadhyay** and R.N. Basu, “Processing of Metal-supported Solid Oxide Fuel Cell using Ni-Fe-bimetallic Porous support”, Current Density and Temperature Distributions in a 3D Planar SOFC Unit” - Recent Trend In Condensed Matter Physics (RTCMP 2017), October 31- November 3, 2017, Vol No NTF 004, Page 209
 11. Monojit Das Bairagya, **Jayanta Mukhopadhyay**, Abhijit Das Sharma and R.N. Basu, “Deposition of Thin/thick Films by Solution Spray Pyrolysis & Screen Printing Techniques for application in Anode-supported Solid Oxide Fuel Cell”, - Recent Trend In Condensed Matter Physics (RTCMP 2017), October 31- November 3, 2017, Vol No NTF 009, Page 214
 12. Abdul Alim, Quazi Arif Islam, Abhijit Das Sharma, Awadesh K Mallik, **Jayanta Mukhopadhyay** and R.N. Basu, “Synthesis and Characterization of Ni-Ba_{0.8}Ce_{0.35}Zr_{0.5}Tb_{0.15}O₃-□ Dense Ceramic Membranes for Hydrogen Separation”, - Recent Trend In Condensed Matter Physics (RTCMP 2017), October 31- November 3, 2017, Vol No NTF 014, Page 214
 13. Koyel Banerjee, **Jayanta Mukhopadhyay** and Rajendra N. Basu, “Studies of ‘A’ site Non Stoichiometry in Sr-doped Lanthanum Ferrite and Its Effectivity with Cobalt-based Composite Cathode: Application of Intermediate Bi-layer for SOFC Stability”, National Seminar on Indian Innovations in Materials Research: New Materials and Processes (IIMR-15), CSIR-CGCRI, Kolkata, 25-27 June, 2015, Page 66, Abstract No: A-56
 14. Rajashree Konar, **Jayanta Mukhopadhyay** and Rajendra N. Basu, “Biogas Compatible Anode Cermets for Solid Oxide Fuel Cell Application”, National Seminar on Indian Innovations in Materials Research: New Materials and Processes (IIMR-15), CSIR-CGCRI, Kolkata, 25-27 June, 2015, Page 71, Abstract No: A-61
 15. Sukanya Kundu, **Jayanta Mukhopadhyay**, Abhijit Das Sharma and Rajendra N. Basu, “Preparation and Characterization of Yttrium-substituted SrTiO₃ for Solid Oxide Fuel Cell Application”, National Seminar on Indian Innovations in Materials Research: New Materials and Processes (IIMR-15), CSIR-CGCRI, Kolkata, 25-27 June, 2015, Page 119, Abstract No: A-109

16. Sukanya Kundu, Arindam Mandal, A. Das Sharma, **J. Mukhopadhyay** and R.N. Basu “Fabrication and Characterization of Porous Metal Support for Metal-Supported Solid Oxide Fuel Cell Application” in 1st International Conference on Emerging Materials: Characterization and Application (EMCA-2014) during 4-6th December 2014, in CSIR-CGCRI, Kolkata, Page 42, Abstract No: 48 (Section of Contributory Oral / Poster Presentation)
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18. Madhumita Mukhopadhyay, **J. Mukhopadhyay**, A. Das Sharma and R.N. Basu, “Electrical and Electrochemical Behaviour of Novel Ni-YSZ SOFC Anode Prepared by Electroless Technique”, International Symposium on Energy materials: Opportunities and challenges (ISEM -20011), CSIR-CGCRI, Kolkata, 1-2nd March 2011, Page - 102.
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Patents

1. A. Kumar, P.Sujatha Devi, A Das Sharma, **Jayanta Mukhopadhyay** and H.S. Maiti, “ A process for the continuous production of sinteractive lanthanum chromite based oxides” **Indian Patent No. 283758**, Grant date: 30.05.2017
2. Rajendra Nath Basu, Madhumita Mukhopadhyay, **Jayanta Mukhopadhyay** and Abhijit Das Sharma; “Improved process for the preparation of planar anode-supported solid oxide fuel cell”, Indian patent, **Patent No: 302932, Grant Date: 06.11.2018**
3. Rajendra Nath Basu, **Jayanta Mukhopadhyay**, Suman Das, Prasanta K. Das, Abhijit Das Sharma and Tapobrata Dey; “A Solid Oxide Fuel Cell Stack”, Indian patent, (Application No: 0536DEL2015 dtd 25.02.2015)

Book Chapters / Monograph

1. "Energy Generation and Storage Device: High Temperature Fuel Cell" by R.N. Basu, **J. Mukhopadhyay** and A. Das Sharma in INSA Monograph on Energy, Editors: Boldev Raj, U. Kamachi Mudali and Indranil Manna – Proc Indian Natn Sci Acad 81 No. 4 September 2015 pp. 841-864



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