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**Department** : Physics  
**Date of Birth** : 03.02.1992  
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### Academic Qualification

S. No.	Degree	University / Instituion	Year of Completion
1.	B.Sc.	The Gandhigram Rural Institute- Deemed to be University	2012
2.	M.Sc.	The Gandhigram Rural Institute- Deemed to be University	2014
3.	M.Phil.	The Gandhigram Rural Institute- Deemed to be University	2015
4.	Ph.D.	National Institute of Technology - Tiruchirappalli	2021

**Total Experience:**

- UG: 1 year 5 months
- PG: 1 year 5 months

**Professional Affiliation:**

- Member of SPIE Chapter, NITT (2016-17)
- Member of Consumer care & HEPSN
- Member of IQAC
- Member of Physical education

**Fellowship and Awards**

- INSPIRE Fellowship, DST INSPIRE Program, New Delhi, INDIA.
- JACFRP project, 2021-2022

**Area of Specialization:** Energy storage devices, Biosensors

**List of Papers presented in the conferences/ seminars/ workshops:**

1. Hydrothermal synthesis of cobalt oxide micro bundles and their high electrochemical performance as supercapacitor. (AMEEA-2015 Advanced Materials for Energy and Environmental Application, Bharathiar University, Coimbatore)
2. Electrochemical performance of  $\text{ZnCo}_2\text{O}_4$  anode material in the  $\text{Na}_2\text{SO}_4$  electrolyte medium. (ICRAMCS- 2015 International Conference on Recent Advances in materials and chemical sciences, Gandhigram Rural Institute –Deemed University, Dindigul) **ISBN:**978-93-85477-46-1
3. Electrochemical performance of  $\text{ZnCo}_2\text{O}_4$  nanoparticle, (ICNBL-2016, International conference on Nanotechnology for better living, NIT-Srinagar, Kashmir) **ISBN:** 978-981-09-7519-7
4. Effect of alkaline and neutral electrolytes in the  $\text{Co}_3\text{O}_4$  material for supercapacitor application. RSC (Royal society of Chemistry) -NIT symposium 2016, Tiruchirappalli, Tamil Nadu.
5. Facile synthesis of  $\text{ZnCo}_2\text{O}_4/\text{rGO}$  nanocomposite for effective supercapacitor application. (61st DAE SSPS 2016), KIIT university, Bhubaneswar, Odisha.
6. Achieving high capacitance in  $\text{ZnCo}_2\text{O}_4$  nanomaterial through different synthesis approach. (ICREST 2017), International conference on Renewable energy science and technology, Alagappa university, Karaikudi -630 003 **ISBN:** 978-93-85682-46-9
7. Effect of reaction temperature for synthesizing  $\text{ZnCo}_2\text{O}_4$  and study its supercapacitance performance, (ICEEAMSF 2017), International conference on Energy, Environment and

advanced materials for a sustainable future, Kongu Engineering college, Erode -638 060. **ISBN:** 978-81-933005-2-7

**8.** Surfactant assisted  $\text{ZnCo}_2\text{O}_4$  nanomaterial for supercapacitor application, (ICONN-2017), International conference on Nanoscience and Nanotechnology, SRM university, Chennai.

**9.** Facile microwave-hydrothermal synthesis of NiS nanostructures for supercapacitor applications, (ICONN-2017), International conference on Nanoscience and Nanotechnology, SRM university, Chennai.

**10.** Influence of different synthesis approach on  $\text{ZnCo}_2\text{O}_4$  nanomaterial and its supercapacitor behavior. (62nd DAE SSPS 2017) DAE convention centre, Anusakthinagar, Mumbai.

**11.** To study the pseudocapacitor behaviour of urchin like  $\text{NiCo}_2\text{O}_4$  nanomaterial, International Conference on Sustainable Energy Technologies (i-SET 2018), 27-28 June 2018, School of Physics and School of Chemistry, Bharathidasan University, Tiruchirappalli-620024, Tamilnadu.

**12.** Pseudocapacitive Performance of  $\text{NiCo}_2\text{O}_4$  nanostructures, (63rd DAE SSPS-2018) Guru Jambheshwar University, Hisar, Haryana.

**13.** Controllable synthesis of  $\text{V}_2\text{O}_5/\text{Mn}_3\text{O}_4$  nanoflakes and to investigate the performance of all solid-state asymmetric supercapacitor device, (ICONN-2019) - 5th International Conference on Nanoscience and Nanotechnology, SRM IST, Chennai.

**14.** Investigating the antibacterial activities of dinickel- diphosphate [ $\alpha\text{-Ni}_2(\text{P}_2\text{O}_7)$ ] nanosheets – I, Proceedings of the International Virtual Conference on Recent Trends in Physics (ICRTP), 16<sup>th</sup> and 17<sup>th</sup> March, 2023, Jayaraj Annapackiam College for Women (Autonomous), Periyakulam.

**15.** Investigating the Structural and Morphological Variations of  $\text{NiCo}_2\text{S}_4$  Nanoparticle by Varying the Concentration of Thiourea, A.B. Shanmugapriya, M. Raghanila, **A. Juliet Christina Mary** and R. Mary Mathelane, Proceedings of the International Virtual Conference on Recent Trends in Physics (ICRTP), 16<sup>th</sup> and 17<sup>th</sup> March, 2023, Jayaraj Annapackiam College for Women (Autonomous), Periyakulam.

**(Last six Years): 15**

## Publications

1. Hydrothermal synthesis of Mn-doped  $\text{ZnCo}_2\text{O}_4$  electrode material for high-performance Supercapacitor, **A Juliet Christina Mary** and A Chandra Bose, Applied Surface Science 425 (2017) 201–211.
2. Surfactant assisted  $\text{ZnCo}_2\text{O}_4$  nanomaterial for supercapacitor application, **A Juliet Christina Mary** and A Chandra Bose, Applied Surface Science 449 (2018) 105-112
3. Facile Microwave-hydrothermal synthesis of Ni-S nanostructures for supercapacitor application, S. Nandhini, **A Juliet Christina Mary** and G. Muralidharan, Applied Surface Science 449 (2018) 485-491.
4. Incorporating  $\text{Mn}^{2+}/\text{Ni}^{2+}/\text{Cu}^{2+}/\text{Zn}^{2+}$  in the  $\text{Co}_3\text{O}_4$  Nanorod: To Investigate the Effect of Structural Modification in the  $\text{Co}_3\text{O}_4$  Nanorod and Its Electrochemical Performance, **A Juliet Christina Mary** and A Chandra Bose, ChemistrySelect 4 (2019) 160.
5. Controllable Synthesis of  $\text{V}_2\text{O}_5/\text{Mn}_3\text{O}_4$  Nanoflakes and rGO Nanosheets: To investigate the Performance of All Solid-State Asymmetric Supercapacitor Device, **A Juliet Christina Mary** and A Chandra Bose, ChemistrySelect 4 (2019) 7874-7882.
6. Hierarchical porous structured N-doped activated carbon derived from Helianthus Annuus seeds as a cathode material for hybrid supercapacitor device, **A Juliet Christina Mary**, C Nandhini, and A Chandra Bose, Materials Letters 256 (2019) 126617
7. Fabrication of hybrid supercapacitor device based on  $\text{NiCo}_2\text{O}_4@\text{ZnCo}_2\text{O}_4$  and the biomass-derived N-doped activated carbon with a honeycomb structure, **A. Juliet Christina Mary**, CI. Sathish, P. S. Murphin Kumar, Ajayan Vinu, and A Chandra Bose, Electrochimica Acta 342 (2020) 136062
8. Investigating the structural, morphological, and electrochemical performance of  $\text{rGO}/\text{NiCo}_2\text{O}_4@\text{ZnCo}_2\text{O}_4$  ternary composite material: To evaluate the performance of all-solid-state symmetric/asymmetric supercapacitor device, **A. Juliet Christina Mary**, CI. Sathish, Ajayan Vinu, and A Chandra Bose, Energy and Fuels 34 (2020) 10131-10141
9. Supercapacitor and non-enzymatic biosensor application of the  $\text{Mn}_2\text{O}_3/\text{NiCo}_2\text{O}_4$  composite material, **A. Juliet Christina Mary**, S. Siva Shalini, R. Balamurugan, M.P. Harikrishnan, and A. Chandra Bose, New journal of chemistry 44 (2020) 11316-11323
10. Electrochemical performance of  $\text{ANiO}_3$  (A= La, Ce) Perovskite Oxide material and its device performance for supercapattery application, M.P. Harikrishnan, **A. Juliet Christina Mary**, and A. Chandra Bose, Electrochimica Acta, 362 (2020) 137095.
11. Effect of reaction temperature for synthesizing  $\text{ZnCo}_2\text{O}_4$  and study its supercapacitance

performance, **A. Juliet Christina Mary**, S. Thilagavathi and A. Chandra Bose, High technology letters, 26 (2020).

12. Hierarchical porous carbon nanoparticles derived from Helianthus Annuus for glucose sensing application, S. Siva Shalini, R. Balamurugan, **A. Juliet Christina Mary**, and A. Chandra Bose. Emergent Materials 4 (2021) 755-760.

13. Investigating the electrochemical performance of Ammonium Oxonium Dodeca Molybdo phosphate microcubes for supercapacitor application, **A. Juliet Christina Mary**, L. Lavanya. Materials letters 340 (2023) 134150.

### **Papers published in international journals**

1. Synthesis of ammonium oxonium dodeca molybdophosphate nanostructures for supercapacitor application, L. Lavanya, **A. Juliet Christina Mary**, and J. Pragathi, Malaysian NANO-An International Journal. 2 (2022) 19-26.

### **Papers published in conference proceedings**

1. Facile synthesis of  $\text{ZnCo}_2\text{O}_4/\text{rGO}$  nanocomposite for effective supercapacitor application. **A Juliet Christina Mary** and A Chandra Bose (61st DAE SSPS 2016), KIIT university, Bhubaneswar, Odisha. AIP Conference Proceedings **1832**, 050093 (2017); doi: 10.1063/1.4980326

2. Influence of different synthesis approach on  $\text{ZnCo}_2\text{O}_4$  nanomaterial and its supercapacitor behavior. A. Juliet Christina Mary, S. Thilagavathi and A. Chandra Bose (62nd DAE SSPS 2017) DAE convention centre, Anusakthinagar, Mumbai. AIP Conference Proceedings **1942**, 140042 (2018); doi:10.1063/1.5029173.

3. Pseudocapacitive Performance of  $\text{NiCo}_2\text{O}_4$  nanostructures, A Juliet Christina Mary and A Chandra Bose, (63rd DAE SSPS-2018) Guru Jambheshwar University, Hisar, Haryana. AIP Conference Proceedings **2115**, 030552 (2019); doi:10.1063/1.5113391

### **Seminars/Conference/Workshops Participated**



