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**Designation** : Assistant professor  
**Department** : Physics  
**Date of Birth** : 03.02.1992  
**Date of Appointment** : 05.07.2021

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

### Google scholar citation link:

<https://scholar.google.co.in/citations?user=YJnpLdQAAAAJ&hl=en>

Citations: 431

h-index :10

i10-index:10

### 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

## Projects Completed

S.No	Degree	Project title	Research Supervisor
1	B. Sc	Implementation of UJT Characteristics Display System.	Professor. G. Muralidharan, GRI- DU
2	M. Sc	A study on the effect of pH variation in the synthesis of CuO Nanoparticles.	Professor. S. Arumugam, GRI- DU
3	M.Phil	Synthesis and characterization of CuO/C <sub>3</sub> O <sub>4</sub> nanoparticles for supercapacitor application.	Professor. G. Muralidharan, GRI- DU
4	Ph. D	Investigation on electrochemical performance of MCo <sub>2</sub> O <sub>4</sub> (M= Ni, Zn) based anode and carbon-based cathode materials for the supercapacitor application	Professor. A. Chandra Bose NIT- Trichy
5		Metal Phosphates based Electrode Materials for Supercapacitor Application – JACFRP Project	

### Experience in teaching:

- UG: 3 years
- PG: 3 years

### Professional Affiliation:

- Member of SPIE Chapter, NITT (2016-17)
- Member of Consumer care & HEPSN
- Member of IQAC
- Member of Physical education
- Organizing Secretary of “International Virtual Conference on Recent Trends in Physics” (ICRTP) held at 16<sup>th</sup> and 17<sup>th</sup> March, 2023 organized by Jayaraj Annapackiam College for Women (Autonomous), Periyakulam.
- Organizing Committee Member of “International Virtual Conference on Emerging Technologies in Materials Science” (ICETM - 2024) held at 22<sup>nd</sup> February, 2024 organized by Jayaraj Annapackiam College for Women (Autonomous), Periyakulam.

## Fellowship and Awards

- INSPIRE Fellowship, DST INSPIRE Program, New Delhi, INDIA.
- Best Poster Presentation Award ((ICONN-2017), SRM university, Chennai
- JACFRP project, 2021-2022

## Faculty development Program and Short term courses attended

- ❖ Completed the “Short Term Programme on Building Competencies of Teachers in Blending Learning” organized by the Malaviya Mission Teacher Training Centre, University of Hyderabad from 19<sup>th</sup> February to 24<sup>th</sup> February, 2024.

## E- contents developed

Name of the module developed	Date of launching the e-content	Link to the relevant document and facility available in the institution	List of the e-content development facilities available
Free, Forced and Damped Oscillations	04.10.2023	<a href="https://youtu.be/9W5HbTNemOs?list=PLK9IwGmfBJV5HPisNY0WtP9rTKmNIoIDO">https://youtu.be/9W5HbTNemOs?list=PLK9IwGmfBJV5HPisNY0WtP9rTKmNIoIDO</a>	Laptop, e-content developing studio (JACTILE)
Thermal and Electrical Properties	12.10.2023	<a href="https://youtu.be/ghJcZ2g5pmI">https://youtu.be/ghJcZ2g5pmI</a>	Laptop, e-content developing studio (JACTILE)

## Papers presented in conference/workshops/seminars

1. Hydrothermal synthesis of cobalt oxide micro bundles and their high electrochemical performance as supercapacitor. **A Juliet Christina Mary**, N Maheswari, and G Muralidharan (AMEEA-2015 Advanced Materials for Energy and Environmental Application, Bharathiar University, Coimbatore)
2. Electrochemical performance of  $ZnCo_2O_4$  anode material in the  $Na_2SO_4$  electrolyte medium. **A Juliet Christina Mary** and A Chandra bose (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  $ZnCo_2O_4$  nanoparticle. **A Juliet Christina Mary** and A Chandra Bose (ICNBL-2016, International conference on Nanotechnology for better living, NIT-Srinagar, Kashmir) **DOI: 10.3850/978-981-09-7519-7nbl16-rps-235, 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. **A Juliet Christina Mary** and A Chandra Bose, 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. **A Juliet Christina Mary** and A Chandra Bose (61<sup>st</sup> DAE SSPS 2016), KIIT university, Bhubaneswar, Odisha. AIP Conference Proceedings **1832**, 050093 (2017); doi: 10.1063/1.4980326
6. Achieving high capacitance in  $\text{ZnCo}_2\text{O}_4$  nanomaterial through different synthesis approach. S Thilagavathi, **A Juliet Christina Mary** and A Chandra Bose (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, S Thilagavathi, **A Juliet Christina Mary** and A Chandra Bose (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, **A Juliet Christina Mary** and A Chandra Bose (ICONN-2017), International conference on Nanoscience and Nanotechnology, SRM university, Chennai. **BEST POSTER PRESENTATION AWARD.**
9. Facile microwave-hydrothermal synthesis of NiS nanostructures for supercapacitor applications, S. Nandhini, **A. Juliet Christina Mary** and G. Muralidharan, (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. **A. Juliet Christina Mary**, S. Thilagavathi and A. Chandra Bose (62<sup>nd</sup> DAE SSPS 2017) DAE convention centre, Anusakthinagar, Mumbai. AIP Conference Proceedings **1942**, 140042 (2018); doi:10.1063/1.5029173
11. To study the pseudocapacitor behaviour of urchin like  $\text{NiCo}_2\text{O}_4$  nanomaterial, **A Juliet Christina Mary** and A Chandra Bose, 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. (ORAL presentation)

12. Pseudocapacitive Performance of NiCo<sub>2</sub>O<sub>4</sub> nanostructures, **A Juliet Christina Mary** and A Chandra Bose, (63<sup>rd</sup> DAE SSPS-2018) Guru Jambheshwar University, Hisar, Haryana. AIP Conference Proceedings **2115**, 030552 (2019); [doi:10.1063/1.5113391](https://doi.org/10.1063/1.5113391)
13. Controllable synthesis of V<sub>2</sub>O<sub>5</sub>/Mn<sub>3</sub>O<sub>4</sub> nanoflakes and to investigate the performance of all solid-state asymmetric supercapacitor device, **A Juliet Christina Mary** and A Chandra Bose, 28<sup>th</sup> Jan-30<sup>th</sup> Jan 2019, (ICONN-2019) - 5<sup>th</sup> International Conference on Nanoscience and Nanotechnology, SRM IST, Chennai.
14. Investigating the antibacterial activities of dinickel- diphosphate [ $\alpha$ - Ni<sub>2</sub>(P<sub>2</sub>O<sub>7</sub>)] nanosheets, M. Santhanalakshmi, and **A. Juliet Christina Mary**, 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 NiCo<sub>2</sub>S<sub>4</sub> Nanoparticle by Varying the Concentration of Thiourea, A.B. Shanmugapriya, M. Raghanila, **A. Juliet Christina Mary** and R. Mary Mathelane, 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.

#### **Papers published in SCIE indexed Journals**

1. Hydrothermal synthesis of Mn-doped ZnCo<sub>2</sub>O<sub>4</sub> electrode material for high-performance Supercapacitor, **A Juliet Christina Mary** and A Chandra Bose, Applied Surface Science 425 (2017) 201–211.
2. Surfactant assisted ZnCo<sub>2</sub>O<sub>4</sub> 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 Mn<sup>2+</sup>/Ni<sup>2+</sup>/Cu<sup>2+</sup>/Zn<sup>2+</sup> in the Co<sub>3</sub>O<sub>4</sub> Nanorod: To Investigate the Effect of Structural Modification in the Co<sub>3</sub>O<sub>4</sub> Nanorod and Its Electrochemical Performance, **A Juliet Christina Mary** and A Chandra Bose, ChemistrySelect 4 (2019) 160-170.
5. Controllable Synthesis of V<sub>2</sub>O<sub>5</sub>/Mn<sub>3</sub>O<sub>4</sub> 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 seed 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  $\text{NiCo}_2\text{O}_4@Zn\text{Co}_2\text{O}_4$  and the biomass-derived N-doped activated carbon with a honeycomb structure, **A. Juliet Christina Mary**, Cl. 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  $r\text{GO}/\text{NiCo}_2\text{O}_4@Zn\text{Co}_2\text{O}_4$  ternary composite material: To evaluate the performance of all-solid-state symmetric/asymmetric supercapacitor device, **A. Juliet Christina Mary**, Cl. 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. Investigating the electrochemical performance of Ammonium Oxonium Dodeca Molybdophosphate microcubes for supercapacitor application, **A. Juliet Christina Mary**, and L. Lavanya, *Materials Letters* 340 (2023) 134150.
  12. Development of different nanostructured nickel oxide (NiO): Investigations on highly efficient asymmetric solid state supercapacitor device, Dhanabal, R, **A. Juliet Christina Mary**, Suhash Ranjan Dey, and A. Chandra Bose, *Journal of Solid State Electrochemistry* 27 (2023) 3269-3280.

### **Papers published in International Journals**

1. 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.
2. Investigating the electrochemical and antibacterial activities of nickel pyrophosphate [ $\alpha\text{-Ni}_2\text{P}_2\text{O}_7$ ] nanostructures, **A. Juliet Christina Mary**, M. Santhanalakshmi, and L. Lavanya, *Advances in Natural Sciences: Nanoscience and Nanotechnology* 14 (2023) 045014.

3. Synthesis of ammonium oxonium dodeca-molybdophosphate nanostructures for supercapacitor application, L. Lavanya, **A. Juliet Christina Mary**, J. Pragathi, Malaysian NANO-An International Journal, 2(2) (2022) 19-26.
4. Enhanced photocatalytic and antibacterial performance of NiCo<sub>2</sub>S<sub>4</sub> nanostructures, Shanmugapriya A. B, R. Mary Mathelane, **A. Juliet Christina Mary**, A. Jegatha Christy, and Suresh Sagadevan, MRS Advances (2024) 1-7.

#### **Papers published in National Journals**

1. Synthesis of ZnCo<sub>2</sub>O<sub>4</sub> nanoflakes and its electrochemical performance, **A. Juliet Christina Mary**, and A. Chandra Bose, JAC Journal of Science, Humanities and Management, 9, 2021, 95-107.

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

1. Facile synthesis of ZnCo<sub>2</sub>O<sub>4</sub>/rGO nanocomposite for effective supercapacitor application. **A Juliet Christina Mary** and A Chandra Bose (61<sup>st</sup> DAE SSPS 2016), KIIT university, Bhubaneswar, Odisha. AIP Conference Proceedings **1832**, 050093 (2017); [doi: 10.1063/1.4980326](https://doi.org/10.1063/1.4980326).
2. Influence of different synthesis approach on ZnCo<sub>2</sub>O<sub>4</sub> nanomaterial and its supercapacitor behavior. **A. Juliet Christina Mary**, S. Thilagavathi and A. Chandra Bose (62<sup>nd</sup> DAE SSPS 2017) DAE convention centre, Anusakthinagar, Mumbai. AIP Conference Proceedings **1942**, 140042 (2018); [doi:10.1063/1.5029173](https://doi.org/10.1063/1.5029173).
3. Pseudocapacitive Performance of NiCo<sub>2</sub>O<sub>4</sub> nanostructures, **A Juliet Christina Mary** and A Chandra Bose, (63<sup>rd</sup> DAE SSPS-2018) Guru Jambheswar University, Hisar, Haryana. AIP Conference Proceedings **2115**, 030552 (2019); [doi:10.1063/1.5113391](https://doi.org/10.1063/1.5113391)