Biodata

Name of the Faculty: Dr. CH. Shilpa Chakra

Designation: Assistant Professor of Nano Technology & Head of the Department , Centre for Nano Science and Technology, UCESTH.
Addition Duties: Officer in-charge of Examination , UCESTH

Name of the Department: Centre for Nanoscience and Technology, JNTUH- UCESTH.

1. **Academic Qualifications**: B.Tech (Bio Technology), M. Tech. (Nano Technology), Ph.D. (Nano Science and Technology)
2. **Professional Experience:**
   - **R & D Experience: 01**
   - **Teaching Experience : 13**
3. **Research**
   - **Research Projects : 12**

- Analysis of Structure-Property Relationship in Ultra-Wide Band Gap Semiconductor Ga2O3 for Functional Device Applications funded by DST SERB Core for an amount of Rs. 12.54 Lakhs. **(2023-2026).**
- Development of Green Hybrid Nano Generator for Energy Harvesting using Novel Nano Composite Material funded by AICTE-RPS for an amount of Rs.18.6 Lakhs**. (2022-2025)**
- Sophisticated Flexible Supercapacitor for High Energy Storage application based on Nanomaterials funded by DST-SEED for an amount of Rs.44.07 Lakhs. **(2020-2023)**
- Chemical and Electrochemical synthesis of metals, polymers, metal-polymer nanocomposites using liquid/liquid electrode (aqu)/electrolyte(org) interfaces their electrochemical applications funded by DST-Woman scientist scheme (WOS-A) for an amount of 34 Lakhs. **(2021-2024)**
- A new archetype for development of Flexible Nano Hybrid Supercapacitor for large scale electric energy storage with high performance funded by DST SERB Core for an amount of Rs.41.84 Lakhs. **(2020-2023)**
- Novel green synthesis and characterization of nanoparticles and its study on seed germination, growth factors funded by TEQIP-II for an amount of Rs.2.0 Lakhs. **(2015-16)**
- Synthesis and characterization of nanomaterials for energy storage applications funded by TEQIP-II for an amount of Rs.1.75 Lakhs. **(2015-16)**
- Adsorption studies and removal of fluoride from aqueous solution using Nanocomposite materials, funded by TEQIP-III for an amount of Rs.2.0 Lakhs. **(2018-19)**
- 3D printed Nanoparticle electrodes for high areal capacitance electrochemical storage funded by TEQIP-III for an amount of Rs.2.0 Lakhs. **(2019-2020)**

- ❖ Printing of 3D parts/objects using nanocomposite materials with ultra-high properties funded by TEQIP-III Twinning R&D collaborative project for an amount of Rs.2.0 Lakhs. **(2020-2021)**
- ❖ Carbon nanospheres supported visible light driven $ZnSb_2O_6$: synthesis, characterization and photocatalytic dye degradation studies funded by Collaborative Research Scheme, TEQIP-III, JNTUH. for an amount of 2.5 Lakhs. **(2019-2020)**
- ❖ Eco-Friendly Flexible Transparent Conductive Cellulose Silver/MWCNT Nanopaper,Battery for Energy Storage Application funded by AICTE MODROBS for an amount of 10 Lakhs. **(2019-2022)**

- ➢ **Books : 05**

- ➢ **Publications**: 105
  National Journals: 02
  International Journals: 78
  National Conferences: 12
  International Conferences: 06
  Book Chapters: 07

  List of Publications:

1. Enhanced Structural and Electrochemical properties of spinel structured Ca doped nickel cobaltite nanoparticles synthesized by microwave hydrothermal method Sathyanarayana Neelam, Rakeshkumar Thida,Shilpa Chakra Chidurala, Srinivasu Daripaalli, Ravinder Reddy Butreddy, International Journal of Engineering Research and Applications, 13, May 2023, 29-41
2. Electrochemical Properties of Fe Doped NiCo2O4 Synthesised by Low-Temperature Microwave Hydrothermal Process, Satyanarayana Maheshwaram, Rakesh Kumar Thida, Shilpa Chakra Chidurala, Venkata Narayana M, Ravinder Reddy Butreddy, International Journal of Science and Research (IJSR) , 12, Apr 2022,1559-1568
3. Structural and electrochemical properties of spinel structured $NiCO_2O_4$ nanoparticles sintered at different temperatures for potential supercapacitors, Sathyanarayana N, Shilpa Chakra Ch, Sadhana K, Venkata Narayana M, Ravinder Reddy B, 12th International İstanbul Scientific Research Congress on Life, Engineering, and Applied Sciences-Conference Proceedings, Jan, 2023Pg 595-602
4. Development of MOF Based Recyclable Photocatalyst for the Removal of Different Organic Dye Pollutants, Narasimharao Kitchamsetti, Chidurala Shilpa Chakra, Ana Lucia Ferreira De Barros, Daewon Kim, Nanomaterials, 13, 2023, 336.
5. Bifunctional g-CN/carbon nanotubes/WO ternary nanohybrids forphotocatalytic energy and environmental applications, U.Bharagav, N.Ramesh Reddy, V.Nava Koteswara Rao, P.Ravi, M.Sathish, Dinesh Rangappa, K.Prathap, Ch. Shilpa Chakra, M.V.Shankar, Lise Appels, Tejraj M, Aminabhavi,, Raghava Reddy Kakarla, M.Mamatha Kumari, Chemosphere, 311, 2023, 137030
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10. Sketchy synthesis of Mn3O4, Mn3O4/AC and Mn3O4/CNT composites for application of/in Energy cache, Sakaray Madhuri, Chidurala Shilpa Chakra, Katlakunta Sadhana, Velpula Divya, Materials Today: Proceedings 2022
11. Preparation, characterization and photocatalytic activity studies of C-and N-doped CoSb2O6, M Sunku, R Gundeboina, CHS Chakra, VK Reddy, M Vithal, Inorganic Chemistry Communications 134, 109064,2021.
12. A systematic investigation on the effect of Reducing Agents towards Specific Capacitance of NiMg@OH/ Reduced Graphene Oxide Nanocomposites, Shireesha K, Divya V, Pranitha G, Ashok Ch, Shilpa Chakra Ch, Himabindu, Materials Technology · November 2021.
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98. Synthesis of Nanocrystalline Bismuth Ferrite by Solution Combustion Synthesis Method,V. Sesha Sai Kumar, K. Venkateswara Rao, Ch. Shilpa Chakra, A. Shiva Kishore Goud ,T.Krishnaveni, Journal of NanoScience, Nanoengineering & Applications, Volume 1, Issue 2, , Pages 52-58, Sep, 2011.

Book Chapters :

1. Synthesis and Characterization of Emerging Nanomaterials, **Chidurala Shilpa Chakra**, Velpula Divya, Konda Shireesha, Sakaray Madhuri, Thida Rakesh Kumar, Adapa Uday Krishna, and Deshmukh Rakesh, Emerging Materials Design, Characterization and Applications Emerging Material, Springer, 37-102, 2022, ISBN: 978-981-19-1312-9
2. Carbon: A Phantom for Nanocomposite-Driven Applications, S Madhuri, **CS Chakra**, TR Kumar, K Shireesha, SK Pavar, V Divya, Carbon Nanomaterial Electronics: Devices and Applications, 77-95,2021
3. Applications of Carbon-Based Nanomaterials in Health and Environment: Biosensors, Medicine and Water Treatment, V Divya, SK Pavar, **CS Chakra**, TR Kumar, K Shireesha, S Madhuri, Carbon Nanomaterial Electronics: Devices and Applications, 261-284, 2021
4. High Surface Saccaharum Officinarum Based Materials for Supercapacitor Applications, V. Divya, CH. Shilpa Chakra, T. Rakesh Kumar, K. Shireesha, Handbook of Supercapacitor Materials, Wiley – VCH.

5. Recent Progress in Photocatalytic Water Carbon Splitting Photocatalysts by Nanostructured–Influence TiO-of 2-Interfaces, Morphological Structures and Experimental Parameters, V Preethi, MM Kumari, NR Reddy, U Bhargav, KK Cheralathan **CH Shilpa Chakra** et al, Integrating Green Chemistry and Sustainable Engineering, 23, 2019
6. Removal of PB2+ from Water using Silica Nano Spheres Synthesized on CaCO3 as a Template: Adsorption Kinetics, M Manyangadze, J Govha, TB Narsaiah, **CS Chakra**, PA Swanthanthra, Innovative Technologies for the Treatment of Industrial Wastewater, 125-147, 2017.
7. Removal of fluoride in water using amorphous nano metal oxides, J Govha, TB Narsaiah, **CS Chakra**, Innovative Technologies for the Treatment of Industrial Wastewater, 1-16, 2017.

3. **Events Participated/Organized : 52/28**

4. **Honours & Professional Activities**

- **Awards :** 06
  - Awarded as Young Faculty from Venus International Faculty Award in 2016.
  - Elected as Associate Fellow of the academy in recognition contributions to Editor-Journal of Advanced Materials and Nano Research (JAMNR)
  - Science and Technology, from Andhra Pradesh Akademi of Sciences in 2018.
  - Elected as Associate Fellow of the academy in recognition contributions to Science and Technology, from Telangana Academy of Sciences in 2019.
  - Fellow of LSF- Asian Record Book in the areas of Science & Technology from Lee Shreyus Foundation, Recognized by Ministry of Cooperate, GoI.
  - Vivekananda Prize Award from Institute of Researchers, Recognized by Ministry of MSME, GoI.
  - Young Researcher Award from Institute of Researchers, Recognized by Ministry of MSME, GoI.

- **Professional Activities:**
  - BOS Chairperson for Nanotechnology, JNTUH (2016 – 2021).
  - BOS Member for B. Tech. Material Science and Nano Technology, JNTUH (2015-2016).
  - BOS Member for Nano Technology, JNTUH (2017-2018).
  - BOS Member for Nano Technology, JNTUH (2019-till date).
  - Life Member of Institution of Engineers (M-1768101)
  - Life Time Member of Youth Environmental Council
  - Life Member of Indian Science Congress.
  - Life Member of Electron Microscope Society of India.
  - Life Member of Nano and Molecular Society.
  - Life Member of Indian Crystallographic Association.
  - Life Member of Nano Science and Technology Consortium.
  - Life Member of Powder Metallurgy Association of India.
  - Life Member of Society for Materials Chemistry.
  - Advisory Board Member of United Research Forum
  - Member of IBSC , DBT, GoI (09/04/2019-09/04/2020)
  - Executive Board member for Lee Shreyus Foundation
  - R&D Advisor member in Nanospan India Pvt Ltd
  - Member Technical Advisory Board, VNRVJIET
  - Member of IBSC , DBT, GoI (05/08/2022-Till date)
  - Editor-Journal of Advanced Materials and Nano Research (JAMNR)
  - Reviewer for international Journals from Springer, Wiley, Elsevier

5. **<u>Teaching:</u>**
   - M.Tech. (Nano Technology) II Year /III semester 3NTOE Applications of Nanotechnology
   - M.Tech. (Nano Technology) II Year /III Semester 3A05 (PRC-I & PRC-II)
   - M.Tech. (Nano Technology) II Year /IV Semester 4A06 (PRC-III)
   - M.Tech. (Nano Technology) I Year /I Semester 1NTPE04 Nano Biomedical Applications

- ❖ M.Tech. (Nano Technology) I Year /I Semester 1NTL05 Synthesis of Nanomaterials Lab
- ❖ M.Tech. (Nano Technology) I Year /I Semester 1NTL06 Fabrication and Characterization of Nanomaterials Lab

6. <u>Administrative Positions Held :</u>

- ❖ Procurement Coordinator for Institute of Science and Technology, JNTUH (28/3/2022 - till date)
- ❖ IQAC, Coordinator for Institute of Science and Technology, JNTUH (16/12/2021 – 12/11/2022)
- ❖ AICTE Coordinator for Institute of Science and Technology, JNTUH (29/05/2022 - till date)
- ❖ Training and Placement Coordinator for Institute of Science and Technology, JNTUH (11/11/2021 – 23/04/2022)
- ❖ Academic Coordinator for Institute of Science and Technology (29/05/2020 -Till date).
- ❖ Head of the Department, Centre for Nano Science and Technology (2020-Till date).
- ❖ Coordinator for Management Information System (MIS), TEQIP-III (2019- till date).
- ❖ BOS Member for Nano Technology, JNTUH (2019-2020).
- ❖ Coordinator for Procurement Management Support System (PMSS), TEQIP-III (2018-till date).
- ❖ Chaired a session 3rd International Conference on Environmental Management (ICEM-2017) (27/11/2017 - 30/11/2017).
- ❖ BOS Member for Nano Technology, JNTUH (2017-2018).
- ❖ BOS Chairperson for Nanotechnology, JNTUH (2016 – 2021).
- ❖ Nodal Officer Procurement, TEQIP-II (2015-16).
- ❖ Chaired a session for 2nd Two day national conference on Water Environment & Society (30/07/2015-31/07/2015).
- ❖ BOS Member for B. Tech. Material Science and Nano Technology, JNTUH (2015-2016).
- ❖ Head of the Department, Centre for Nano Science and Technology (2013-2017).

7. **<u>Project/Research Guidance</u>** (only numbers)
   - ➢ R & D Projects Sanctioned/Granted: 11
   - ➢ Research guidance:
     - ❖ M.Tech:81
     - ❖ B.Tech:17
     - ❖ Ph.D:03 (Pursuing)
     - ❖ M.Sc: 18

   Consultancy : Nil

8. **Countries/Foreign Universities Visited :**
   - ❖ Arizona State University, Phoenix, USA.

9. **Others** (if any):

   Innovations during COVID-19 first wave/Lockdown.

   - ❖ Made Efforts for **COVID-19** by 3D printing **Face Shields** for doctors and concerned health care workers and Police.
   - ❖ Attempts for collaborative project under Rashtriya Uchchatar Shiksha Abhiyan (RUSA 2.0), Ministry of Human Resource Development on “Printable Energy Storage Device for portable devices based on nanomaterials” with Yogi Vemana University.
   - ❖ Attempts for collaborative project under Rashtriya Uchchatar Shiksha Abhiyan (RUSA 2.0), Ministry of Human Resource Development on “3D printing, Design and Development of an efficient Polyethylene Glycol coated Zinc Oxide Nanoweapon to fight against COVID-19” with Yogi Vemana University.

10. **Area of Expertise:**

Nanotechnology based applications: Energy Storage & Conversion technology (Fabrication of Batteries, Supercapacitors, Nano-generators etc) , Nano-biosensor , Carbon Based Materials, Nano-Biotechnology, Surface Coatings , 3D Printing/ Additive manufacturing, Polymers and its composites, Anti-Cancer and Anti-Microbial Application, Electrospinning, Water Purification, Agriculture, Nutrition improvement in Food , Textile Application.

11. Web Pages:

Faculty Webpage**:** https://jntuhist.ac.in/faculty_details/14/dept/531
AICTE Faculty ID:1-12134455624
Google Scholar: https://scholar.google.co.in/citations?user=gTm-lG4AAAAJ&hl=en
Research Gate: https://www.researchgate.net/profile/Shilpachakra-Chidurala
ORCID ID: 0000-0001-9556-712X
VIDWAN ID: 123822

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Name of the Faculty: Dr. CH.Shilpa Chakra
Designation & Name of the Department: Assistant Professor of Nano Technology & Head of the Department for Nano Technology,
Additional Duties: NBA and Procurement Coordinator for UPGCST (Institute of Science and Technology).

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