FACULTY PROFILE

Name : Dr. B. GNANA SUNDARA RAJ
Designation : Assistant Professor (Grade I)
Department : Chemistry
Communication : 545/396, Sivakamipuram Street,
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1. EDUCATIONAL QUALIFICATION:

Degree	Branch / Specialization	Institute/University	Year of Passing
Ph.D.	Chemistry	National Institute of Technology, Tiruchirappalli	2017
M.Sc.	Chemistry	Vivekananda College (Autonomous), Tiruvedakam West, Madurai	2006
B.Sc.	Chemistry	Ayya Nadar Janaki Ammal College (Autonomous), Sivakasi	2004

2. PROFESSIONAL / INDUSTRIAL EXPERIENCE : (in chronological order)

Sl.No	University/College	Designation	Period	
			From	To
1.	Ramco Institute of Technology, Rajapalayam	Assistant Professor (Grade I)	04.08.2025	Till date
2.	Velammal College of Engineering and Technology, Madurai	Assistant Professor	03.06.2024	30.04.2025

3. RESEARCH AREA

Nanotechnology, Energy Storage and Conversion device: Supercapacitors, Li-ion, Li-air batteries, Sensors: Electrochemical sensors, electrochemical biosensors

Updated on 06.06.2026

3.1. RESEARCH EXPERIENCE

S.No	University/College	Designation	Period		Total Years
			From	To	
1.	University of Concepcion, Concepcion, Chile	Principal Investigator (FONDECYT Postdoctoral 2019)	14.03.2019	14.03.2022	3 years
2.	Chonbuk National University, Jeonju, South Korea	Postdoctoral fellow	01.06.2017	28.02.2019	1 year 9 months
3.	SRM University, Kattankulathur, Chennai	Postdoctoral fellow	13.03.2017	31.05.2017	2.5 months
4.	National Institute of Technology, Tiruchirappalli	Project Senior Research Fellowship (SRF)	01.05.2012	30.04.2015	3 years
5.	CSIR- Central Electrochemical Research Institute (CSIR-CECRI)	Project Assistant Level – III	10.02.2010	31.03.2012	2 years 1 months
6.	CSIR- Central Electrochemical Research Institute (CSIR-CECRI)	Project Assistant Level – II	22.03.2007	29.12.2009	2 years 9 months

Ph.D. Thesis Title & Guide Name:

Joining Date: 27.09.2012 **Thesis submitted on:** 12.05.2016

"Nanostructured metal oxides for electrochemical applications" – **Awarded** on **27th Sep. 2016** – Under the Guidance of Dr. S. Anandan, Professor, Department of Chemistry, National Institute of Technology, Tiruchirappalli.

3.2. VISITING FELLOWSHIP PROGRAMME – Nil

3.3 SUPERVISORY SUPPORT AND PROJECT GUIDANCE:

Research Stage	Title of work / thesis	University where the work was carried out
Project Guidance (**under PG Level**) **Student Name** ***1***. R. R. Ramprasad	Ultrasound assisted synthesis of Mn_3O_4 nanoparticles anchored graphene nanosheets for supercapacitor applications	National Institute of Technology, Tiruchirappalli
2. S. Bhuvaneshwari	Sonochemical synthesis of Co_2SnO_4 nanocubes for supercapacitor applications	National Institute of Technology, Tiruchirappalli
3. R. Angulakshmi	Pseudocapacitive performance of Mn_3O_4 –SnO_2 hybrid nanoparticles synthesized via ultrasonication approach	National Institute of Technology, Tiruchirappalli

3.4 RESEARCH GUIDESHIP - Nil

4. PUBLICATIONS

4.1 JOURNAL PUBLICATIONS

1. V. Vinoth, Muthamizh S, Arul Varman K, K Shanmugaraj, M Govinda raj, Rubina M, **B.Gnana Sundara Raj,** N. Pugazhenthiran, C. T. Ortiz, R. V. Mangalaraja, published a paper entitled "Highly selective and ultrasensitive electrochemical detection of guanine and adenine using AuNCs/MXene composite" **Surfaces and Interfaces 87 (2026) 108920**, published on 03.03.2026. (DOI: https://doi.org/10.1016/j.surfin.2026.108920 Indexed in **Scopus, SCIE, and SJR**, IF:**6.3**).

2. V. Vinoth, S. Gowrishankar, K. Reshma, K. Shanmugaraj, **B. Gnana Sundara Raj**, T. Arun, T. Prabhakaran, N. Pugazhenthiran, M. Paulraj, S. Anandan, Highly sensitive electrochemical sensor for glutathione detection using zinc oxide quantum dots anchored on reduced graphene oxide, **Surfaces and Interfaces**, 51 (2024) 104777 [IF: 5.7].

3. **B. Gnana Sundara Raj,** R. V. Mangalaraja, V. Vinoth, N. Pugazhenthiran, F. V. Herrera, RO.MU. Jauhar, S. Anandan, Facile sonochemical synthesis of nanostructured $FeWO_4$-rGO and $CuCo_2O_4$ nanocomposite for high-rate capability and stable asymmetric ($CuCo_2O_4$//$FeWO_4$-rGO) supercapacitors, **Journal of Alloys and Compounds,** 968 (2023) 172156 [IF: 6.2]

4. **B. Gnana Sundara Raj,** T. H. Ko, J. Acharya, M. K. Seo, M. S. Khil, H. Y. Kim, B. S. Kim, A novel Fe_2O_3-decorated N-doped CNT porous composites derived from

tubular polypyrrole with excellent rate capability and cycle stability as advanced supercapacitor anode materials, **Electrochimica Acta**, 334 (2020) 135627 [IF: 6.901]

5. **B. Gnana Sundara Raj**, R. Angulakshmi, N. Baskaran, J. J. Wu, S. Anandan, M. Ashokkumar, Pseudocapacitive performance of Mn_3O_4 –SnO_2 hybrid nanoparticles synthesized via ultrasonication approach, **Journal of Applied Electrochemistry**, 50 (2020) 609–619 [IF: 2.8]

6. J. Acharya, **B. Gnana Sundara Raj**, T. H. Ko, M. S. Khil, H. Y. Kim, B. S. Kim, Facile one pot sonochemical synthesis of CoFe2O4/MWCNTs hybrids with well-dispersed MWCNTs for asymmetric hybrid supercapacitor applications, **International Journal of Hydrogen Energy,** 40 (2020) 3073-3085 [IF: 5.816]

7. **B. Gnana Sundara Raj**, N. Baskaran, A. M. Asiri, J. J. Wu, S. Anandan, Pseudocapacitive Properties of Nickel Oxide Nanoparticles Synthesized via Ultrasonication Approach, **Ionics,** 26 (2020) 953 – 960 [IF: 2.817]

8. P. Veerakumar, T. Maiyalagan, **B. Gnana Sundara Raj**, K. Guruprasad, Z. Jiang, K.C. Lin, Paper flower-derived porous carbons with high-capacitance by chemical and physical activation for sustainable applications, **Arabian Journal of Chemistry,** 13 (2020) 2995–3007 [IF: 5.165]

9. **B. Gnana Sundara Raj**, A. Jiwan, M. K. Seo, M. S. Khil, H. Y. Kim, B. S. Kim, One-pot sonochemical synthesis of hierarchical $MnWO_4$ microflowers as effective electrodes in neutral electrolyte for high performance asymmetric supercapacitors, **International Journal of Hydrogen Energy,** 44 (2019) 10838-10851 [IF: 5.816]

10. **B. Gnana Sundara Raj**, H. Y. Kim, B. S. Kim, Ultrasound assisted formation of Mn_2SnO_4 nanocube as electrodes for high performance symmetrical hybrid supercapacitors, **Electrochimica Acta**, 278 (2018) 93-105 [IF: 6.901]

11. **B. Gnana Sundara Raj,** S. Bhuvaneshwari, J.J. Wu, A. M. Asiri, S. Anandan, Sonochemical synthesis of Co_2SnO_4 nanocubes for supercapacitor applications, **Ultrasonics – Sonochemistry,** 41 (2018) 435–440[IF: 7.491]

12. S. Anandan, **B. Gnana Sundara Raj**, A. V. Emeline, D. Bahnemann, J. J. Wu, Facile ultrasound assisted synthesis of monodisperse spherical $CuMn(OH)_3NO_3$ nanoparticles for energy storage applications, **Journal of Alloys and Compounds,** 699 (2017) 745–750. [IF: 5.316]

13. **B. Gnana Sundara Raj**, J. J. Wu, A. M. Asiri and S. Anandan, Hybrid SnO_2 – Co_3O_4 nanocubes prepared via a CoSn $(OH)_6$ intermediate through a sonochemical route for energy storage applications, **RSC Advances,** 6 (2016) 33361- 33368. [IF: 3.361]

14. T. Selvamani, **B. Gnana Sundara Raj,** S. Anandan, J. J. Wu and M. Ashokkumar, Synthesis of morphology-controlled bismutite for selective applications, **Physical Chemistry Chemical Physics,** 18 (2016) 7768-7779. [IF: 3.676]

15. **B. Gnana Sundara Raj,** R. R. Ramprasad, A. M. Asiri, J. J. Wu and S. Anandan, Ultrasound assisted synthesis of Mn_3O_4 nanoparticles anchored graphene nanosheets for supercapacitor applications, **Electrochimica Acta,** 156 (2015) 127–137. [IF: 6.901]

16. **B. Gnana Sundara Raj,** A. M. Asiri, J. J. Wu and S. Anandan, Synthesis of Mn_3O_4 nanoparticles via chemical precipitation approach for supercapacitor application, **Journal of Alloys and Compounds,** 636 (2015) 234–240. [IF: 5.316]

17. **B. Gnana Sundara Raj,** A. M. Asiri, A. H. Qusti, J. J. Wu and S. Anandan, Sonochemically synthesized MnO_2 nanoparticles as electrode material for supercapacitors, **Ultrasonics Sonochemistry,** 21 (2014) 1933–1938. [IF: 7.491]

18. Y. Munaiah, **B. Gnana Sundara Raj**, T. Prem Kumar, and P. Ragupathy, Facile synthesis of hollow sphere amorphous MnO_2: the formation mechanism, morphology and effect of a bivalent cation-containing electrolyte on its supercapacitive behavior, **Journal of Materials Chemistry A**, 1 (2013) 4300-4306. [IF: 12.732]

19. S. Anandan, **B. Gnana Sundara Raj,** G. J. Lee, J. J. Wu, Sonochemical synthesis of manganese (II) hydroxide for supercapacitor applications, **Materials Research Bulletin,** 48 (2013) 3357–3361. [IF: 4.641]

20. V. Sannasi, **B. Gnana Sundara Raj,** S. Meenakshi, D. Jeyakumar, Synthesis, characterization of poly (4, 4'-dioctyloxy-3, 3'-biphenylene vinylene) s and their optical properties, **Iranian Polymer Journal,** 20 (2011) 633-644. [IF: 1.899]

21. V. Sannasi, P. Manikandan, **B. Gnana Sundara Raj,** M. Vijayan and D. Jeyakumar, Synthesis of Alternate- Block Copolymers of Poly 1, 4-Dioctoxy Phenylene Vinylenes with Varying Positional Naphthalene Segment, **Iranian Polymer Journal,** 19 (2010) 1-13. [IF: 1.899]

Citation indices	*All*	*Since 2021*
Citations	1327	844
h-index	17	16
i10-index	17	17

4.2 CONFERENCE PUBLICATIONS

1. Actively participated in the **International Meeting on Energy Storage Devices** (IMESD-18) held at Indian Institute of Technology, Roorkee, India during December 10-12, 2018 and **presented paper** titled "Sonochemical synthesis of nanostructured metal oxides as efficient electrode materials for high-performance energy storage applications".
2. Actively participated in the NANO KOREA 2018 SYMPOSIUM & EXHIBITION held at KINTEX, Korea during July 10-13,2018 and **presented paper** titled "Facile Synthesis of N-Doped rGO-Decorated Fe_2O_3 Negative Electrodes for Asymmetric Supercapacitor Application".
3. Actively participated in the **National Convention of Electrochemistry** (NCE-19) held at National Institute of Technology, Tiruchirappalli, India during March 28-29, 2016.
4. Actively participated in the **10th Mid-Year CHEMICAL RESEARCH SOCIETY OF INDIA (CRSI) SYMPOSIUM IN CHEMISTRY** held at National Institute of Technology, Tiruchirappalli, India during July 23-25, 2015.
5. Actively participated in the **NATIONAL CONFERENCE ON CHEMOSENSORS** (NCC 2013) held at National Institute of Technology, Tiruchirappalli, India during September 19-20, 2013.
6. Actively participated in the **6th Asian Conference on ELECTROCHEMICAL POWER SOURCES** (ACPES-6) held at Hotel Green Park, Chennai, India during January 5-8, 2012 and **presented paper** titled "*Synthesis and electrochemical performance of Ni-substituted $LiFeO_4$/kish graphite*".
7. Actively participated in the **6th Asian Conference on ELECTROCHEMICAL POWER SOURCES** (ACPES-6) held at Hotel Green Park, Chennai, India during January 5-8, 2012 and **presented paper** titled "*Synthesis and characterization of lithium-rich layered cathode material, $Li[Li_{0.2}Ni_{0.2}Mn_{0.6}]O_2$*".
8. Actively participated in the **Ninth International Symposium on Advances in Electrochemical Science and Technology** (ISAEST-9) held at Hotel Green Park, Chennai, India during December 2-4, 2010 and **presented paper** titled "*Combustion synthesis and lithium intercalation properties of $Li[Li_{0.2}Ni_{0.2}Mn_{0.6}]\ O_2$ cathode materials*".
9. Actively participated in the **International Conference on Electrochemical Power Systems** (ICPES-2008) held at Mascot Hotel, Thiruvananthapuram, Kerala, India during November 26-28, 2008.
10. Actively participated in the **National Convention of Electrochemistry** (NCE-14) held at Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, India during 6-7 December 2007 and **presented paper** titled "*Synthesis and characterization of block co-polymer bearing 2, 5- dioctoxy phenylene and naphyl groups*".
11. Actively participated in the **RECENT TRENDS IN TEXTILE AND ELECTROCHEMICAL SCIENCES** (RATES 2007) held at Algappa University, Karaikudi, India during June 1-2, 2007.

4.3 BOOK / BOOK CHAPTER PUBLICATIONS

1. Victor Vinoth, Michael Rubina, **Balasubramaniam Gnana Sundara Raj**, Kulandaivelu Kaviyarasan, and Nalandhiran Pugazhenthiran published a book chapter (6) entitled **"2D Materials-Based Electrochemical Sensors for Biomedical Applications"** in CRC Press, Taylor & Francis, 2026. e-Book - DOI: 10.1201/9781003531586.

2. B. Gnana Sundara Raj, S. Anandan, R.V. Mangalaraja, published a book chapter entitled "Ultra-thin, flexible hybrid transition metal oxide nanostructures for renewable energy storage devices", **IOP Publishing**, Chapter 6 (2022) 1-23.

4.4 PATENTS PUBLISHED/ GRANTED: Nil

5. LIST OF WORKSHOP / FDP /STTP/WEBMINAR ATTENDED

1. **Dr.B.Gnana Sundara Raj,** AP/Chemistry attended a **"Five-day FDP on Climate Change Mitigation: Impact of Energy Research and Innovation"** organised by Organized by Department of Mechanical Engineering, RAMCO INSTITUTE OF TECHNOLOGY, Rajapalayam from 11.05.2026-15.05.2026.

2. **Dr.B.Gnana Sundara Raj,** AP/Chemistry attended a 5 days FDP on "Hydrogen Energy; System, Applications Storage and Next generation Fuels for Sustainable Engineering" organised by Department of Automobile Engineering,Annasaheb Dange College of Engineering and Technology, Ashta from 23.3.26 to 27.3.26.

3. **Dr.B.Gnana Sundara Raj,** AP/Chemistry attended a Two Days Faculty Development Programme on "Teaching pedagogy" organized by IITM-PALS at IIT Madras, Chennai during 06.03.2026 to 07.03.2026.

4. **Dr.B.Gnana Sundara Raj,** AP/Chemistry, attended a International Virtual Seminar-2026 "**Machine Learning Applications in Drug Discovery: Predicting Drug-Like Properties and Efficacy"** organised by The Departments of Chemistry and Biotechnology, Gnanmani College of Technology, Nammakal on 04.03.2026.

5. **Dr. Gnana Sundara Raj B**, Assistant Professor/Chemistry has attended the Workshop on Funding Schemes in India, Institute R & D and Startup Ecosystem Creation, National R & D Priorities and Naunces in Proposal Writing for faculty members and researchers on February 17, 2026, organized by RIT Research Council and RIT-ISTE at Ramco Institute of Technology, Rajapalayam-626 117.

6. **Dr. B. Gnana Sundara Raj**, AP/Chemistry, attended a One day International webinar on "**From Curiosity To Discovery: Women Scientist In Chemistry** "organized by the PG Department of Chemistry Government Arts College, Tiruchirappalli, on 10.02.2026.

7. **Dr. B. Gnana Sundara Raj,** AP/Chemistry attended 5 days online FDP on "Climate Change and Disaster Risk" Course Code: SPL41F Organized by DEPT. OF TECHNICAL EDUCATION & MANAGEMENT, NITTTR, KOLKATA, on 9-13 Feb 2026.

8. **Dr.B.Gnana Sundara Raj**, Assistant Professor/Chemistry participated in a five-day online Faculty Development Program on **"Advanced Manufacturing and Materials Systems: Processing, Characterization and Testing" (AMMS'26)** organized by the Department of Mechanical Engineering, Ramco Institute of Technology, Rajapalayam, Tamil Nadu, India, during 5th–9th January 2026.

9. **Dr. B. Gnana Sundara Raj**, Assistant Professor of Chemistry has attended the **R&D Conclave 2025 for faculty members and researchers** on December 23, 2025, organized by RIT Research Council at Ramco Institute of Technology, Rajapalayam-626 117.

10. Seven Day National Level Interdisciplinary Virtual Faculty Development Program on "Empowering Teaching and Research Through Emerging Technology", organized by the Department of Physics, Ethiraj College for Women during 22-26, 29&30 July, 2024.

11. Five Day FDP on "INDERNATIONAL FACULTY DEVELOPMENT PROGRAM on OUTCOME BASED EDUCATION" organized by Department of Management Studies, Velammal College of Engineering and Technology, Madurai in collaboration with Allana Institute of Management Sciences, Pune from 01.07.2024 to 05.07.2024.

12. Participated in the Workshop on **Super Conductive Materials and their Fabrication** held at Department of Production Engineering, National Institute of Technology, Tiruchirappalli, India on 17th March 2014. The resource person for the course is **Prof. Dr. Venkat Selvamanickam**, Visiting Professor from University of Houston, Texas.

13. Participated in the Two-day Lecture Workshop on **Recent Advances in Materials Chemistry** held at Department of Chemistry, Anna University Tiruchirappalli, India on March 7-8, 2014.

14. Participated in the Workshop on **Sustainable Energy Conversion and Storage Devices** held at SRM University, Kattankulathur, India during 2-8 September 2013.

15. Participated in the Workshop on **BASIC MOLECULAR SPECTROSCOPY & ELECTROCHEMISTRY** held at CSIR- CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE (CSIR-CECRI), Karaikudi, India during 6-7 September 2013.

6. EVENTS ORGANIZED

1. One day Seminar on "Nanotechnology for Advanced Engineering Applications" during 9th December, 2024 organized by the Department of Chemistry, Velammal College of Engineering and Technology, Madurai. (Coordinator)

2. Eco Club organized competition on "Environmental week" during 18-21th March, 2025, by the Department of Chemistry, Velammal College of Engineering and Technology, Madurai. (Coordinator)

7. AWARDS & ACHIEVEMENTS

1. Selected for **Principal Investigator** by FONDECYT Postdoctoral contest 2019 (March 2019-March 2022) at University of Concepcion, Concepcion, Chile funded by **FONDECYT Postdoctoral program.**
2. Selected for **Postdoctoral fellow (**July 2017-February 2019) at Chonbuk National University, Jeonju, South Korea funded by **BK-21 plus program**.
3. Selected for Project **Senior Research Fellowship (SRF)** (May 2012 – April 2015) funded by Council of Scientific and Industrial Research (CSIR), Government of India.
4. Selected for **Project Assistant- III** (10th Feb 2010 to 31st Mar 2012) at CSIR- Central Electrochemical Research Institute (CSIR-CECRI), Tamil Nadu, India.
5. Selected for **Project Assistant- II** (22nd Mar 2007 to 26th Dec 2009) CSIR- Central Electrochemical Research Institute (CSIR-CECRI), Tamil Nadu, India.

8. TRAINING PROGRAMME PARTICIPATED

1. **Dr. B. Gnana Sundara Raj**, AP/Chemistry participated in the Two day training program on **Art of Counselling** from **25th-26th Feb 2026** in **RIT, Rajapalayam.**

9. ONLINE COURSES

S.No.	Year	Semester	Name of the online course	University
1.	2025-26	EVEN	Basic Engineering Mathematics	*Birla Institute of Technology & Science, Pilani*
2.			Environmental Science	IIT Kharagpur
3.		ODD	Lithium Based Batteries	Arizona State University

10. Institute & Department Level Responsibilities

- Fine Arts and Culture club coordinator
- NAAC – Criteria VI faculty member
- Anti-Ragging member
- Department Exam cell coordinator
- Department meeting minutes

11. List of proposals submitted to various funding agencies like CSIR, DST, DST-SERB, DRDO, TNSCST etc., as PI/Co-PI - Nil