Bio-Data

Name: Dr. Bulusu Venkata Sarada

Designation: Scientist 'G' and Head

Contact Information: Centre for Advanced Materials and Batteries(CAMB)
International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI),
Balapur (PO), Hyderabad 500005
Phone: +91-40-24452448
E-mail: sarada@arci.res.in

Educational Qualifications:

M.Sc. (Physics), Sri Venkateswara University, Tirupathi
M. Phil. (Physics) Central University of Hyderabad, Hyderabad
Ph.D.(Applied Chemistry), Faculty of Engineering, The University of Tokyo, Japan

Professional Experience:

Lecturer in Physics and Electronics, Osmania University:	1993-1997
Postdoctoral fellow: JSPS Post-doctoral Fellow, The University of Tokyo:	2000-2002
JST Researcher, Pre-venture project, The University of Tokyo, Japan:	2002-2003
Woman Scientist (WOS-A) under DST:	2006-2009
Scientist 'D' Centre for Solar Energy Materials (CSEM), ARCI:	2009-2013
Scientist 'E' CSEM, ARCI, Hyderabad:	2013-2019
Scientist 'F' CSEM/CNM, ARCI, Hyderabad:	2019-2025
Scientist 'G' and Head CAMB, ARCI, Hyderabad	2025-Present
Coordinator for the Biomedical Research Group at ARCI:	2018-Present
Board Member from ARCI for the SATHI CISCoM Project	2024-Present

Areas of Research Interest and Expertise:

- Cathode & Anode Materials and electrolytes for Li-S and Na-ion/RT Na-S batteries
- Metal-oxide based nanostructures and carbon for Supercapacitor applications
- Nanostructured Materials, Graphene-based Nanocomposites for energy conversion and storage applications
- Nanostructured materials and coatings for Biomedical/biodegradable implants and devices.
- Nanocoatings and UVC based disinfection systems for anti-viral applications.
- Thin-film Photovoltaic Solar Cells

- Highly textured and nanotwinned copper foils for electronic applications by pulsed electrodeposition
- Synthesis and Applications of Conducting boron-doped diamond Thin-films and microelectrodes as biosensors and water treatment.

Performance indicators:

Number of publications and proceedings: **81**
H-Index: **32**
Number of patents (issued/filed): **16**
Book Chapters: **7**
Technologies transferred: **3**
Guidance to Ph.Ds : Completed - 5 (IIT-Hyderabad, UoH, Hyderabad and NIT-W), 4 Ongoing (IITM, IITH and NITW)

Major contributions to Research:

Research Projects:

1. Principal investigator (PI) of a subproject for India-USA consortium project (SERIIUS) for development of CIGS based thin film solar photovoltaic devices by vacuum and non-vacuum methods.
2. PI of a subproject in TRC project for Development of CIGS photovoltaic solar Cells on flexible substrates.
3. PI of a subproject in TRC-2 for Development of electrode materials and devices and their scaling up for Li-S batteries and supercapacitors.
4. Co-PI in DST-SERI project for Design and Development of Cost-efficient Solar Receiver Tube for Medium and High Temperature Solar Thermal Applications
5. Co-PI in Nanomission project for the Development of copper based antiviral coatings on fabric for PPEs to fight against COVID-19.
6. Co-PI in IGSTC project for development of biodegradable STAs based on Fe-Mn and Mg.
7. Co-PI in ANRF MAHA EV Project on Development and Demostration of materials and fabrication technologies for tropical batteries

List of Publications:

1. **Sarada, BV**; Rao, TN; Tryk, DA; Fujishima, A, "Electrochemical characterization of highly boron-doped diamond microelectrodes in aqueous electrolyte" *Journal of The Electrochemical Society*, 146 (4) (1999) 1469-1471. Fujishima, A; Rao, TN; Popa, E; **Sarada, BV**; Yagi, I; Tryk, DA, "Electroanalysis of dopamine and NADH at conductive diamond electrodes" *Journal of Electroanalytical Chemistry*, 473 (1-2) (1999) 179-185.

2. **Sarada, BV**; Rao, TN; Tryk, DA; Fujishima, A, "Electrochemical detection of serotonin using conductive diamond electrodes" *Chemistry Letters*, 11 (1999) 1213-1214.
3. **Sarada, BV**; Rao, TN; Tryk, DA; Fujishima, A, "Electroanalytical applications of conductive diamond electrodes" *New Diamond and Frontier Carbon Technology*, 9 (5) (1999) 365-377.
4. **Sarada, BV**; Rao, TN; Tryk, DA; Fujishima, A, "Electrochemical oxidation of histamine and serotonin at highly boron doped diamond electrodes" *Analytical Chemistry*, 72 (7) (2000) 1632-1638.
5. Chailapakul, O; Popa, E; Tai, H; **Sarada, BV**; Tryk, DA; Fujishima, A, "The electrooxidation of organic acids at boron-doped diamond electrodes" *Electrochemistry Communications*, 2 (6) (2000) 422-426.
6. Rao, TN; **Sarada, BV**; Tryk, DA; Fujishima, A, "Electroanalytical study of sulfa drugs at diamond electrodes and their determination by HPLC with amperometric detection" *Journal of Electroanalytical Chemistry*, 491 (1-2) (2000) 175-181.
7. Spataru, N; **Sarada, BV**; Popa, E; Tryk, DA; Fujishima, A, "Voltammetric determination of L-cysteine at conductive diamond electrodes" *Analytical Chemistry*, 73 (3) (2001) 514-519. **I. F.: 8.01**
8. Terashima, C; Rao, TN; **Sarada, BV**; Tryk, DA; Fujishima, A, "Electrochemical oxidation of chlorophenols at a boron-doped diamond electrode and their determination by high-performance liquid chromatography with amperometric detection" *Analytical Chemistry*, 74 (4) (2002) 895-902.
9. Rao, TN; Loo, BH; **Sarada, BV**; Terashima, C; Fujishima, A, "Electrochemical detection of carbamate pesticides at conductive diamond electrodes" *Analytical Chemistry*, 74 (7) (2002) 1578-1583.
10. Kondo, T; Einaga, Y; **Sarada, BV**; Rao, TN; Tryk, DA; Fujishima, A, "Homoepitaxial single-crystal boron-doped diamond electrodes for electroanalysis" *Journal of Electrochemical Society*, 149 (6) (2002) E179-E184.
11. Ivandini, TA; **Sarada, BV**; Terashima, C; Rao, TN; Tryk, DA; Ishiguro, H; Kubota, Y; Fujishima, A, "Electrochemical detection of tricyclic antidepressant drugs by HPLC using highly boron-doped diamond electrodes" *Journal of Electroanalytical Chemistry*, 521 (1-2) (2002) 117-126.
12. Spataru, N; **Sarada, BV**; Tryk, DA; Fujishima, A, "Anodic voltammetry of xanthine, theophylline, theobromine and caffeine at conductive diamond electrodes and its analytical application" *Electroanalysis*, 14 (11) (2002) 721-728.
13. Chailapakul, O; Siangproh, W; **Sarada, BV**; Terashima, C; Rao, TN; Tryk, DA;

Fujishima, A, "The electrochemical oxidation of homocysteine at boron-doped diamond electrodes with application to HPLC amperometric detection" *Analyst*, 127 (9) (2002) 1164-1168.

14. Olivia, H; **Sarada, BV**; Shin, D; Rao, TN; Fujishima, A, "Selective amperometric detection of dopamine using OPPy-modified diamond microsensor system" *Analyst*, 127 (12) (2002) 1572-1575.
15. Shin, DC; **Sarada, BV**; Tryk, DA; Fujishima, A, "Application of diamond microelectrodes for end-column electrochemical detection in capillary electrophoresis" *Analytical Chemistry*, 75 (3) (2003) 530-534.
16. Terashima, C; Rao, TN; **Sarada, BV**; Fujishima, A, "Amperometric detection of oxidized and reduced glutathione at anodically pretreated diamond electrodes" *Chemistry Letters*, 32 (2) (2003) 136-137.
17. Terashima, C; Rao, TN; **Sarada, BV**; Spataru, N; Fujishima, A, "Electrodeposition of hydrous iridium oxide on conductive diamond electrodes for catalytic sensor applications" *Journal of Electroanalytical Chemistry*, 544 (2003) 65-74.
18. Terashima, C; Rao, TN; **Sarada, BV**; Kubota, Y; Fujishima, A, "Direct electrochemical oxidation of disulfides at anodically pretreated boron-doped diamond electrodes" *Analytical Chemistry*, 75 (7) (2003) 1564-1572.
19. Rao, TN; Ivandini, TA; Terashima, C; **Sarada, BV**; Fujishima, A, "Applications of bare and modified diamond electrodes in electroanalysis" *New Diamond and Frontier Carbon Technology*, 13 (2) (2003) 79-88
20. Ivandini, TA; **Sarada, BV**; Terashima, C; Rao, TN; Tryk, DA; Ishiguro, H; Kubota, Y; Fujishima, A, "Gradient liquid chromatography of leucine-enkephalin peptide and its metabolites with electrochemical detection using highly boron-doped diamond electrode" *Journal of Chromatography B-Analytical Technologies in Biomedical and Life Sciences*, 791 (2003) 63-72.
21. Ivandini, TA; **Sarada, BV**; Rao, TN; Fujishima, A, "Electrochemical oxidation of underivatized-nucleic acids at highly boron-doped diamond electrodes" *Analyst*, 128 (7) (2003) 924-929.
22. Olivia, H; **Sarada, BV**; Honda, K; Fujishima, A, "Continuous glucose monitoring using enzyme-immobilized platinized diamond microfiber electrodes" *Electrochimica Acta*, 49 (13) (2004) 2069-2076.
23. **Sarada B. V**.; Pavithra, CLP; Ramakrishna M.; Rao, TN.; Sundararajan G., "Highly (111) textured copper foils with high hardness and high electrical conductivity by pulse reverse electrodeposition" *Electrochemical and Solid State Letters*, 13(6) (2010) d40-d42.

24. Chakravarty, Dibyendu; **Sarada, B. V**.; Chandrasekhar, S. B., Saravanan, K., Rao, T. N., A novel method of fabricating porous silicon, *Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing*, Volume: **528** (2011) **7831-7834**.

25. **Sarada B. V**, Radha L., Rao T. N., Surface Plasmon Resonance Enhanced Photoelectrochemical Studies at Gold-modified TiO_2 Nanotube Arrays. *Nanotech Insights*, January, 2012

26. **B. V. Sarada**, Ch. L. P. Pavithra, M. Ramakrishna and Tata N. Rao, "Nanostructured copper foils by Pulse Reverse Electrodeposition for Interconnect Applications", *Nanotech Insights*, Volume 4 (2013).

27. Sreekanth Mandati, **Bulusu V. Sarada**, Suhash R. Dey and Shrikant V. Joshi, Pulse electrodeposition and characterization of CIGS thin-films for solar applications., Proceedings of ELAC-2013, Fifth ISEAC Triennial International Conference on Advances and Recent Trends in Electrochemistry, Hyderabad.

28. Sreekanth Mandati; **Sarada, B V**.; Dey, Suhash R and Shrikant V. Joshi, Pulsed Electrodeposition of CuInSe2 Thin Films with Morphology for Solar Cell Applications, *Journal of Electrochemical Society* , **160** (2013) **D173-D177**.

29. Sreekanth Mandati, **Sarada, B V**, Suhash R. Dey, and Shrikant V. Joshi, Improved photoelectrochemical performance of Cu(In,Ga)Se2 thin films prepared by pulsed electrodeposition, *J. Renewable and Sustainable Energy*, 5 (2013) 031602.

30. Sreekanth Mandati, **Sarada, B V**, Suhash R. Dey, Shrikant V. Joshi, Two-step Pulsed Current Electrodeposition of CIGS Absorber Layers for Thin Film Solar Cells, *Materials Letters*,118 (2014) 158.

31. Pavithra Ch.L.P., **Sarada B. V**., Rajulapati K. V., Rao T. N., Sundararajan G., A New Electrochemical Approach for the Synthesis of Copper-Graphene Nanocomposite Foils with High Hardness, *Scientific Reports/Nature Publishing Group*, 4 (2014) Article No.4049.

32. Sreekanth Mandati, **Sarada B. V.,** Suhash R. Dey, Shrikant V. Joshi Photoelectrochemistry of Cu(In,Ga)Se_2 thin-films fabricated by sequential pulsed electrodeposition, *Journal of Power Sources*, 273 (2014) 149-157.

33. Sreekanth Mandati, **Sarada B V**, Suhash R. Dey, Shrikant V. Joshi Cu(In,Ga)Se2/CdS heterojunction with enhanced photoelectrochemical performance and stability – *Electronic Materials Letters*, 11 (2015) 618.

34. Ch. L. P. Pavithra**, B. V. Sarada**, M. Ramakrishna, Tata N. Rao, R. Koteswara Rao, G. Sundararajan, Texture-property correlation in copper foils with enhanced mechanical and electrical properties prepared by pulse reverse electrodeposition, *Crystal Growth and Design*, 15 (2015) 4448.

35. *Chokkakula L. P. Pavithra***, B. V. Sarada** , Koteswararao V. Rajulapati , Tata N. Rao, G. Sundararajan Process Optimization for Pulse Reverse Electrodeposition of Graphene-Reinforced Copper Nanocomposites, , *Materials and Manufacturing Technologies*, 31 (11) (2016) 1439.
36. E Hari Mohan; **B. V. Sarada**; R. Venkata Ram Naidu; Girish Salian; K. Haridas Anulekha; B. V. Appa Rao and T. N. Rao Graphene-Modified Electrodeposited Dendritic Porous Tin Structures as Binder Free Anode for High Performance Lithium-Sulfur Batteries, , *Electrochimica Acta*, 219 (2016) 701.
37. S. Sakthivel, **B. V. Sarada** and Tata Narasinga Rao, Nanomaterials and Coatings for Concentrated Solar Thermal Power (CSP) Applications, *Nano Digest 8th Anniversary Issue 2016.*
38. P.M. Pratheeksha, E. Hari mohan, **B. V. Sarada**, M. Ramakrishna; K. Hembram; P.V.V. Srinvas; D. Paul Joseph, S. Anandan, T.N. Rao Core-shell carbon coating strategy for production of bulk carbon coated-conducting LFP for high energy density LIB applications, , *Physical Chemistry Chemical Physics,* 19 **(2017)** 175.
39. . Manasa, A. Jyothirmayi, T. Siva, **B. V. Sarada** M. Ramakrishna, S. Sathiyanarayanan, K. V. Gobi , R. Subasri Nanoclay-based Self-Healing, Corrosion Protection Coatings on Aluminum, A356.0 and AZ91 Substrates, S, *Journal of Coatings Technology and Research* 14 (5) (2017) 1195-1208.
40. R. Subasri, S. Manasa, Swapnil H. Adsul, **B. V. Sarada**, Micro-Raman Spectroscopic Studies for Evaluation of Self-Healing Property of Corrosion Protection Coatings on Al and Mg alloys, Proceedings of CORCON 2017
41. Swapnil H. Adsul, K.R.C. Soma Rajua, **B. V. Sarada** , Shirish H. Sonawanec, R. Subasri, Evaluation of self-healing properties of inhibitor loaded nanoclay-based anticorrosive coatings on magnesium alloy AZ91D, *Journal of Magnesium and alloys*, 6(3) (2018) 299-308**.**
42. Divya Boosagulla, Sreekanth Mandati, RamachandraiahAllikayala and **B. V. Sarada**, Room Temperature Pulse Electrodeposition of CdS Thin Films for Application in Solar Cells and Photoelectrochemical cells, *ECS Journal of Solid State Science and Technology,* 7(8) (2018) P440-P446.
43. Sreekanth Mandati, Suhash R. Dey, Shrikant V. Joshi and **B. V. Sarada**, Cu(In,Ga)Se_2 Films with Branched Nanorod Architectures Fabricated by Economic and Environmental-friendly Pulse-reverse Electrodeposition Route, *ACS Sustainable Chemistry and Engineering*, 6 (11) (2018) 13787-13796.
44. Copper Chalcopyrites for Solar Energy Applications, Sreekanth Mandati, Prashant Misra, **B. V. Sarada** and Tata Narasinga Rao, *Transactions of The Indian Institute of Metals*, 72 (2) (2019) 271-288.
45. E. Hari Mohan, Katchala Nanaji, Srinivasan Anandan, **B. V. Sarad**a, Mantripragada Ramakrishna, A. Jyothirmayi, B.V. Appa Rao, Tata Narasinga Rao,

One-step induced porous graphitic carbon sheets as supercapacitor electrode material with improved rate capability, *Materials Letters*, 236 (2019) 205–209.

46. Nanaji Katchala, Hari Mohan E., **B. V. Sarada**, Varadaraju U.V., Tata N. Rao, Anandan Srinivasan, One step synthesized hierarchical spherical porous carbon as an efficient electrode material for lithium ion battery, *Materials Letters*, 237 (2019) 156-160.
47. Sreekanth Mandati, Suhash R. Dey, Shrikant V. Joshi and **B. V. Sarada** Two-dimensional $CuIn_{1-x}Ga_xSe_2$ Nano-flakes by Pulse Electrodeposition for Photovoltaic Applications, *Solar Energy*, 181 (2019) 396.
48. Tejassvi Pakki, Hari Mohan E., Neha Y. Hebalkar, A. Jyothirmayi, **B. V. Sarada**, Srinivasan Anandan, Krishna Mohan Mantravadi, Tata N. Rao, Flexible and freestanding carbon nanofiber matt derived from electrospun polyimide as an effective interlayer for high performance Li-S batteries, *Journal of Materials Science*, 54 (2019) 9075.
49. S. Mandati and **B. V. Sarada**, Electrodeposited Chalcopyrite $CuInGaSe_2$ Absorbers for Solar Energy Harvesting, *Materials Science for Energy Technologies* 3, 440 (2020).
50. S. Mandati, P. Misra, B. Divya, T. N. Rao, and **B. V. Sarada**, Economic Pulse Electrodeposition for Flexible $CuInSe_2$ Solar Cells, *Materials for Renewable and Sustainable Energy* 9(3), 1 (2020).
51. Fight Against COVID-19: ARCI's Technologies for Disinfection, **B. V. Sarada**, R. Vijay, R. Johnson, T. Narasinga Rao and G. Padmanabham, *Transactions of The Indian National Academy of Engineering*, Invited Article (2020} 349-354.
52. P. Samhita, K. Nanaji, S. Mandati, T. N. Rao, S. K. Martha and **B. V. Sarada**, Electrodeposited NCO Nanosheets with Oxygen Vacancies: An Efficient Electrode Material for Hybrid Supercapacitors, *Batteries and Supercaps*, 2020, 3, 1209– 1219.
53. P. Misra, S. Mandati, T. N. Rao and **B. V. Sarada**, A multi-layer Cu-In-Ga precursor sputtering approach for improving structural quality of selenized CIGS absorber layer, *Materials Today Proceedings*, https://doi.org/10.1016/j.matpr.2020.09.545
54. P. Misra, S. R. Atchuta, S. Mandati, **B. V. Sarada**, T. N. Rao and S. Sakthivel, A non-vacuum dip coated SiO_2 interface layer for fabricating CIGS solar cells on stainless steel foil substrates, Solar Energy, 214 (2021) 471-477.
55. Mandati, S., Misra, P., Boosagulla, D., Rao, T. N., **Sarada, B.V**., Solar energy harvesting through photovoltaic and photoelectrochemical means from appositely prepared CuInGaSe2 absorbers on flexible substrates by a low-cost and industrially benign pulse electrodeposition technique, Industrial and Engineering Chemistry Research, 60 (5)(2021) 2197-2205. DOI: 10.1021/acs.iecr.0c05934

56. Mandati, S., Misra, P., Boosagulla, D., Rao, T. N., **Sarada, B.V**., Control over MoSe2 formation with vacuum-assisted selenization of one-step electrodeposited Cu-In-Ga-Se precursor layers, Environmental Science and Pollution Research, 28 (12) (2021) 15123-15129. DOI: 10.1007/s11356-020-11783-z

57. Nanaji, K., **Sarada, B.V**., Varadaraju, U.V., N Rao, T., Anandan, S., A novel approach to synthesize porous graphene sheets by exploring KOH as pore inducing agent as well as a catalyst for supercapacitors with ultra-fast rate capability, Renewable Energy, 172 (2021) 502-513.

58. Pavithra, C.L.P., Janardhana, R.K.S.K., Reddy, K.M., Murapaka, C., Joardar, J., **Sarada, B.V**., Tamboli, R.R., Hu, Y., Zhang, Y., Wang, X., Dey, S.R., An advancement in the synthesis of unique soft magnetic CoCuFeNiZn high entropy alloy thin films, Scientific Reports, 11 (1) (2021) art. no. 8836. DOI: 10.1038/s41598-021-87786-8

59. Boosagulla, D., Mandati, S., Misra, P., Allikayala, R., **Sarada, B.V.**, Pulse electrodeposited zinc sulfide as an eco-friendly buffer layer for the cadmium-free thin-film solar cells, *Superlattices and Microstructures*, 160 (2021) art. no. 107060. DOI: 10.1016/j.spmi.2021.107060.

60. Samhita Pappu, Tata N. Rao, Surendra K. Marth, **Sarada B.V.**, Electrodeposited Manganese Oxide based Redox Mediator Driven 2.2 V High Energy Density Aqueous Supercapacitor, Energy, Vol 243, pp. 122571, 2022.

61. Divya Boosagulla, Sreekanth Mandati, Ramachandraiah, A., **Sarada B. V.,** Role of Tartaric acid in Growth Mechanism of Pulse Electrodeposited CdS and ZnS Thin Films, Thin Solid Films, 741, (2022) 139011

62. Samhita Pappu, Srinivasan Anandan, Tata N. Rao, Surendra K. Marth, **Sarada B. V.**, High-performance hybrid supercapacitor with electrochemically exfoliated graphene oxide incorporated $NiCo_2O_4$ in aqueous and non-aqueous electrolytes, Journal of Energy Storage, Vol 50, pp. 104598, 2022.

63. Sadananda Muduli, Samhita Pappu, **Sarada B. V.**, Tata N. Rao, Surendra K. Marth, Electrochemically Exfoliated Carbons as Sustainable Anode Materials for Lead Carbon Hybrid Ultracapacitor, ChemElectroChem, https://doi.org/10.1002/celc.202200230, 2022.

64. Boya Venugopal, Parakandy Muzhikara Pratheeksha, Khasim Saheb Bayikadi, Pavan Srinivas Veluri, Mantripragada Rama Krishna, **Sarada B. V.**, Tata Narasinga Rao, Paul Joseph Daniel and Srinivasan Anandan, Oxygen vacancies enable excellent electrochemical kinetics of carbon coated mesoporous SnO2 nanoparticles in lithium ion batteries, Mater. Adv., 3 (2022) 1617.

65. Samhita Pappu, Sadananda Muduli, Nanaji Katchala, Narasinga Rao Tata**, Sarada B. V.**, and Surendra K. Martha, Easy and Scalable Synthesis of NiMnCo-Oxalate Electrode Material for Supercapacitors from Spent Li-Ion Batteries: Power Source for Electrochromic Devices, Energy & Fuels 36 (21) 2022 13398-13407.
66. Madhusrhri Bhar, Samhita Pappu, U Bhattacharjee, **Sarada B.V**. , Tata N Rao, Surendra K Martha Designing a Freestanding Electrode of Intermetallic Ni-Sn Alloy Deposit as an Anode for Lithium-Ion and Sodium-Ion Batteries, , Journal of The Electrochemical Society 170 (4), (2023) 040501
67. Ch. Gowthami; Shreyas, J. Kashyap, Sudhakara Sarma; **B.V. Sarada**, A. Venu Vinod, R. Vijay; Tata N. Rao and Dr. S. Anandan, Enhanced stability and high yield LiFePO4/C derived from low-cost iron precursors for high-energy Li-ion batteries. Journal of Energy Storage 72 (2023) 108453
68. Jyoti Gupta, D. Das, P. H. Borse and **B. V. Sarada**, In-situ Pd doped MoS2 nanosheets as HER electrocatalyst for enhanced electrocatalytic water splitting, Sustainable Energy & Fuels, 8 (2024) 1526.
69. Sony K. Cherian, Katchala Nanaji, **B.V. Sarada**, Tata Narasinga Rao, Chandra S. Sharma. Sulfur confinement into highly porous banana peduncle-derived carbon as for high-rate performance Lithium-Sulfur Battery, Journal of Energy Storage, 89 (2024) 111803.
70. S.S. Sarma, B. Padya, **B.V Sarada,** V. Akhila, C. Gowthami, P.V. Krishna, Two-dimensional hexagonal boron nitride by cryo-milling: microstructure and oxidation behavior at elevated temperature, Journal of Nanoparticle Research 26 (2024) 1.
71. D Boosagulla, R Allikayala, **B.V Sarada**, In Situ Aluminum doped Zinc Oxide Thin Films by Pulse Electrodeposition for the All-electrodeposited Cadmium-free Copper Indium Diselenide Solar Cells, Thin Solid Films (2024) 140434.
72. SK Cherian, MM Gaikwad, K Nanaji, BV Sarada, TN Rao, CS Sharma, Iron, cobalt co-embedded in situ graphitized xerogel-derived carbon as sulfur host for ultrahigh rate and high-performance lithium-sulfur batteries, Journal of Energy Storage 95 (2024) 112587.
73. Suraj Kannur, Mamta Devi, Jampala Pasyanthi, Kaushik Kunte, Gourav Shukla, Premkumar Murugesan, Ajay Mohan, Katchala Nanaji**, B V Sarada**, Sudhanshu Sharma, Swati Sharma, Mithun Radhakrishna, Influence of Electrode Pore Size and Electrolyte on Carbon Aerogel Supercapacitors: Insights from Experimental Studies and Molecular Simulations, ***The Journal of Physical Chemistry C***, 128 (2024) 17836.
74. K. Nanaji, Samhita Pappu, Srinivasan Anandan, B.V. Sarada, R. Vijay, Tata N. Rao, TiNb2O7 nanobead anode coupled porous carbon onion cathode for high energy and power-based hybrid Lithium-Ion Capacitor, ***Journal of Power Sources***, 629 (2025) 236024.

75. Jyoti Gupta, Dibakar Das, Pramod H. Borse, B. V. Sarada, Single step synthesized V-doped few layered MoS_2 nanosheets as an efficient HER cathode for electrocatalytic splitting of saline water, ***J. Alloys and compounds****, 1022 (2025*) 179738.

76. Sony K. Cherian, Ranjini Sarkar, Mohd Shavez, B V Sarada, Tata Narasinga Rao, Chandra Shekhar Sharma, Synergistic Effects of Nitrogen and Sulfur Co-doping in Xerogel Derived Hard Carbon for High-Performance Lithium-Sulfur Batteries**, *J. Alloys and compounds****, 1021, (2025*) 179646.

77. Influence of Sliding Velocity on Wear Behavior of Electrodeposited Ni-W and Hard Chrome Coatings on Gun Barrel Steel, A Raju, A Babu, B Praveen Kumar, Kaustubh Prabhu, B. V. Sarada, L. Rama Krishna, Nitin P Wasekar, ***Journal of Materials Engineering and Performance***, (2025) 1-13.

Proceedings:

78. Rao, TN; **Sarada, BV**; Tryk, DA; Fujishima A., Electrochemical oxidation of sulfa drugs at boron-doped diamond electrodes Conference: 6th International Symposium on Diamond Materials at the 196th Meeting of the Electrochemical-Society Location: HONOLULU, HI Date: OCT 17-22, 1999 Source: DIAMOND MATERIALS VI Series: ELECTROCHEMICAL SOCIETY SERIES Volume: 99 Issue: 32 Pages: 507-511 Published: 2000

79. **Sarada, BV**; Rao, TN; Tryk, DA; Fujishima A, Electrochemical oxidation of histamine and serotonin at highly boron-doped diamond electrodes, Conference: 6th International Symposium on Diamond Materials at the 196th Meeting of the Electrochemical-Society Location: HONOLULU, HI Date: OCT 17-22, 1999Source: DIAMOND MATERIALS VI, Series: ELECTROCHEMICAL SOCIETY SERIES Volume: 99 Issue: 32 Pages: 502-506 Published: 2000

80. Fujishima, A; Rao, TN; **Sarada, BV**, Electroanalytical applications of bare and modified diamond electrodes Conference: 7th International Symposium on Diamond Materials Location: SAN FRANCISCO, CA Date: SEP 07, 2000, DIAMOND MATERIALS VII, PROCEEDINGS, Series: ELECTROCHEMICAL SOCIETY SERIES Volume: 2002 Issue: 25 Pages: 127, 2001.

81. Continuous Glucose Monitoring at GOx/OPPy/Pt-Diamond Microfiber Electrodes, O Herlambang, BV Sarada, Proceedings of the Chemical Sensor Symposium 37 (2003) 85-87

List of Book chapters:

1. **B. V. Sarada**, Terashima, C, Ivandini T A, Rao, T N, Fujishima, A, "Diamond Electrochemistry", Elsevier B V, 2005
2. Olivia, H, **B. V. Sarada**, Rao, T N, Fujishima, A, "Diamond Electrochemistry", Elsevier B V, 2005
3. S. Anandan, H. Neha, **B. V. Sarada**, T. N. Rao, Nanomanufacturing for Aerospace Applications, *Aerospace Materials and Technologies*, Edited by: **Prasad**, N. Eswara, **Wanhill**, R. J. H, Volume 2, 2016. Pp85.
4. Sreekanth Mandati, Suhash R. Dey, Shrikant V. Joshi and **B. V. Sarada**, Pulsed Electrochemical Deposition of $CuInSe_2$ and $Cu(In,Ga)Se_2$ Semiconductor Thin Films, *Semiconductors - Electrochemical Growth and Characterization*. ISBN no: 978-953-51-5589-8, 109-132, (2018).
5. David Ginley, Rakesh Agrawal, **-----, Bulusu Sarada**, -----, Juzer Vasi, Yanping Wang, and Yue Wu, Sustainable Photovoltaics, Lecture Notes in Energy 39. 25, Ginley D., Chattopadhyay K. (eds) Solar Energy Research Institute for India and the United States(SERIIUS), Springer, Cham.https://doi.org/10.1007/978-3-030-33184-9-2
6. Martha, S. K., Samhita Pappu, Rao, T. N., **Sarada, B. V.**, Concept of Thermodynamic Studies in Electrochemical Storage and Conversion Systems , Chapter 35, Encyclopedia of Energy Storage, Ed. Luisa Cabeza, Elsevier. 2022.
7. S Pappu, TN Rao, **B. V. Sarada**, K Nanaji Introduction to Green Supercapacitors: Fundamentals, Design, Challenges, and Future Prospects Chapter 1, Low-carbon Supercapacitors: Towards Sustainability in Energy Storage Devices, Published by Royal Society of Chemistry (RSC), 2023

List of Patents:

1. Test-substance concentration measuring method e.g. for urine involves measuring electric current difference corresponding to oxidation/reduction reaction of either ascorbic acid/ascorbic and uric acid to measure uric acid concentration
Patent Number: **JP2004101437-A; JP3703787-B2** Publication date: 2004-04-02

2. Detection method of inspection compound, and diamond electrode and device used therefore. Patent Number: JP2003121410, Publication date: 2003-04-23

3. Electrochemical Assay using an electroconductive diamond coated electrode, and electrochemical assay system based thereon. Patent Number: **EP1055926A2, EP1055926A3, WO200198766-A; WO200198766-A1; AU200174581-A; JP2002504478-X**

4. Thiol concentration measuring method and sensor used for the same, **JP2002189016A2.** Publication date: 2002-07-05

5. Method for determining concentration of xanthin type compound and sensor for use therein. **WO0198766A1,** Publication date: 2001-12-27

6. Density measuring method e.g for chemical samples, Patent Number: **JP2001021521-A; JP2001050924-A, JP2001091499-A; JP2001147211-A**

7. Density measuring method e.g for chemical samples Patent Number: **KR2001020722-A; KR360991-B**

8. Density measuring method e.g for chemical samples, Patent Number: **EP1055926-A.**

9. Density measuring method e.g for chemical samples, Patent Number: **TW528867-A TW528867-A**

10. Density measuring method e.g for chemical samples, Patent Number: **EP1055926-A; JP2001021521-A; JP2001050924-A; CN1278063-A**

11. Density measuring method e.g for chemical samples, Patent Number: **CN1278063-A**

12. Novel copper foils having high hardness and conductivity and a pulse reverse electrodeposition method for their preparation**. Indian Patent granted: 306501 (2019)**

13. An Improved method of preparing bulk porous silicon compacts. Indian patent Granted. **IN201100912**

14. A Novel Electrochemical Method for Manufacturing CIGS Thin-Films Containing Nanomesh-like Structures**, Indian Patent granted: 337455 (2020)**

15. A Biomass derived porous carbon as sulfur host for energy storage device and a method of preparing thereof. **Indian Patent No. 202341033390 filed on 11th May 2023**

16. Fe, Co co-embedded RF xerogel derived carbon as sulfur host". Indian Patent Application No. 202341042659 filed on 26/06/2023.

17. Fe-Mn based alloy composition and a methods of fabricating biodegradable implants using the same "Provisional Indian Patent Filed No. 202541029825 dt 28-04-2025

18. "P2/P2+O3/O3 Sodium metal oxides electrode materials for sodium ion batteries and method of preparation thereof" Patent No. 202541079459 dt. 21 August 2025

Technologies Co-developed and Transferred to industry for Disinfection of SARS CoV 2:

1. Developed a UVC-Trolley for disinfection of hospitals to fight against COVID-19 in collaboration with University of Hyderabad and Mekins Industries Ltd. Hyderabad

2. Developed a UVC cabinet for disinfection of objects in research laboratories and commercial establishments in collaboration with Mekins Industries Ltd.
3. Developed UVC-baggage scanner (KritiScan UV) for a rapid disinfection of baggage at airports, in collaboration with Vehant Industries Ltd., New Delhi.

Awards/Honours:

- Student Fellowship/ Post-doc Fellowship, Japan Society for the Promotion of Science, Japan (1999).
- Post Doctoral Fellowship/ Japan Society for the Promotion of Science, Japan (2000).
- Fellowship under Woman Scientist Scheme, Department of Science and Technology (DST), India (2006)
- Elected as "Fellow of Telangana Academy of Sciences" in the year 2020.

Responsibility during COVID-19:

Nodal officer for validation of UVC based disinfection Systems under ICMR guidelines

Affiliation to Professional Societies:

1. Editorial Board member for 'Scientific Reports –Nature Publishing Group'
2. Member of 'The Electrochemical Society of India' (ECSI)
3. Member of 'MRSI, India'
4. Member of 'Índian Institute of Metals' (IIM)
5. Member of 'Battery Research Society' (BRS)

Sponsored Research Projects

S. No	Title	Sponsoring Agency and Officer Concerned	Period	Amount (Rs) in Lakhs	Achievements
1.	Scalable CIGS thin-film based solar cells by using economical, environmental friendly and non-vacuum pulsed	SERIIUS Project, Indo-US Forum (DST)	2013-2018	142	CIGS and CIS thin-films have been prepared by using PED on flexible substrates. Soichiometric films with phase pure CIGS have

	electrodeposition technique				been made and devices are fabricated.
2.	CIGS-Based Solar Cells for BIPV by Non-vacuum Based Techniques: Nano-Ink and ED	TRC Project PhaseI (DST)	2015-2020	253.2	CIGS based solar cells are fabricated by using electrodeposited CIGS thin-films and an efficiency of 7.3% has been achieved and these devises are being upscaled.
3.	Development of self-disinfecting nanoparticle and electrospun coatings on face masks and medical suits for Combating COVID-19	Nanomission Project (DST)	2020-2021	21.55	CuO-Ag nanoparticle coated fabric has been prepared and anti-viral masks showing 99.9% disinfection against SARS CoV2 have been demonstrated
4.	Indo German Project on Development of Biodegradable Alloys and AM Processes for Soft Tissue Anchors *(INGERBDIAM)* Consortium partners: ARCI, Wipro 3D, Charite Universty, KCS Europe GmbH	IGSTC, DST	2022-2025	230	On-going
5.	Development of Li-S and pseudocapacitor devices	TRC Phase II, DST	2021-2025	25	On-going
6	Development and Demostration of materials and	ANRF-MAHA EV	2025-2030	7000	On-going

	fabrication technologies for tropical batteries				
7	Scalable Production of in-situ Graphitized Xerogel Derived Carbon as an Efficient Cathode Matrix for the Practical Development of High-Density Lithium-Sulfur Battery	DST-NEST	2025-2028	260	Approved