Scientist / Officers biodata

a. Name.

Katchala Nanaji

b. Education background

M.Sc (Chemistry), SSSIHL Puttaparthi, Anantapur (2013)
Ph. D. (Chemistry), IIT Madras, Chennai (2014-till date)

c. Designation

Project Scientist 'B'

d. Contact information:

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e. Experience:

Project Scientist , ARCI, Hyderabad: November 2017- till date
Research Fellow, ARCI, Hyderabad: July 2013- October 2017
Doctoral Research Scholar, IIT Madras: July 2014- till date

f. Research areas of interest:

- Synthesis and Characterization of efficient electrode materials for energy storage systems such as batteries and supercapacitors.
- Fabrication, testing and analysis of Li-ion battery and Supercapacitor devices
- Materials for visible light photocatalysis
- Porous carbon, Porous metal oxides synthesis by various methods.

g. List of Journal Publications:

1. Facile synthesis of mesoporous carbon from furfuryl alcohol-butanol system by EISA process for supercapacitors with enhanced rate capability, **K. Nanaji**, A. Jyothirmayi, U.V. Varadaraju, T. N. Rao, S. Anandan, ***Journal of Alloys and Compounds***, 2017, 723, 488-497.
2. T. Mitravinda, **K.Nanaji** , S. Anandan, A. Jyothirmayi, Ch. Sai Kiran, Tata N Rao, Chandra Sharma, Facile synthesis of corn silk derived nanoporous carbon for an improved supercapacitor performance, ***Journal of The Electrochemical Society,*** 2018**,** 165 (14) A3369-A3379.
3. **K. Nanaji**, Hari Mohan. E, Sarada V. B, Varadaraju U.V, N. Rao Tata, Anandan. S, **"** One step synthesized hierarchical spherical porous carbon as an efficient electrode material for lithium ion battery", ***Materials Letters,*** 2019, 237, 156-160.

4. E. Hari Mohan, **K. Nanaji**, S. Anandan, S.V. Bulusu, B.V. Appa Rao, T.N. Rao, One-step Induced Porous Graphitic Carbon Sheets as Supercapacitor Electrode Material with Improved Rate Capability, ***Materials Letters,*** 2019, 236, 205-209.
5. **K. Nanaji,** Varadaraju U.V, Tata N. Rao, S. Anandan "Robust, Environmentally Benign Synthesis of Nanoporous Graphene Sheets from Biowaste for Ultrafast Supercapacitor Application", ***ACS Sustainable Chemistry & Engineering,*** 2019, 7, 2516-2529.
6. **K. Nanaji,** R. K. Siri Kiran, Tata N. Rao, S. Anandan, "Energy Level Matching for Efficient Charge Transfer in Ag Doped-Ag Modified TiO_2 for Enhanced Visible Light Photocatalytic Activity" ***Journal of Alloys and Compounds,*** 2019, 794, 662-671.

h. List of Patents:

1. Method of producing graphene like structured nanoporous carbon material from Jute stick based bio-waste for Energy Storage applications and the product thereof" **K. Nanaji**, S. Anandan**,** Tata N. Rao ***(Patent number: No.*****E-2/276//2018/DEL** ***dt. 16/2/2018)***

i. Awards and Honours:

1. Qualified in GATE 2014
2. Received Best paper presentation award in the conference NCCM 2015, Delhi
3. Received Best poster award in the Workshop on Battery Technologies & Electric Mobility 2018 at HPCL, Bangalore

j. Presentation delivered in National/International Conferences:

1. **K. Nanaji,** U. V. Varadaraju, T. N. Rao, S. Anandan, "Graphene like porous carbon sheets derived from hibiscus cannabinus as a versatile electrochemical energy storage material" in 235th ECS Meeting at Dallas, USA, May 26-30, 2019.
2. **K. Nanaji,** U. V. Varadaraju, T. N. Rao, S. Anandan, "Graphene Sheets like Nanoporous Carbon Derived from Agricultural Biowaste (jute stick) as Electrode Material for High Performing Super capacitors" at 'International Conference on Super Capacitors and Energy Storage Applications (ICSEA-2019)' at Thrissur, Kerala, March 08 - 09, 2019.
3. **K. Nanaji,** U. V. Varadaraju, T. N. Rao, S. Anandan, "Three Dimensional Ordered Mesoporous Carbons with Tunable Pore Sizes as Efficient Electrode Material for Improved Lithium Ion Battery and Supercapacitor Applications" at Carbon MEMS: New Horizons' at IIT, Hyderabad, December 05 -07, 2018.
4. EH Mohan, **K Nanaji**, S Anandan, BVA Rao, TN Rao, "Development of Sulfur Cathode Comprising of Biomass Derived Activated Carbon As Host for Improved Lithium-Sulfur Battery Performance" in 233rd ECS Meeting at Seattle, USA, May 13-17, 2018.

5. Attended three days workshop on 'Electron Microscopy (WEM-2018)' held at JNARDDC, Nagpur during April 19 - 21, 2018.
6. **K. Nanaji,** U. V. Varadaraju, T. N. Rao, S. Anandan, "Bio-waste inspired nanoporous carbon as a versatile electrode material for energy storage applications" in 9th Bangaluru India nano at Lalith Ashok, Bangalore, December 7-8, 2017.
7. T. N. Rao, E. Hari mohan, P. Tejassvi, **K. Nanaji,** S. Anandan, "Mesoporous carbon and nanofiber interlayer as efficient polysulfide reservoirs for high performance Lithium-Sulfur batteries" in the workshop Lithium Sulfur Batteries VI at Dresden, Germany, November 6-7, 2017.
8. **K. Nanaji,** U. V. Varadaraju, T. N. Rao, S. Anandan, "Facile synthesis of mesoporous carbon by Evaporation Induced Self-Assembly as electrode material for supercapacitors with enhanced rate capability" in Nano India 2017 organized by IIT Delhi, New Delhi, March 15, 2017.
9. Attended a GIAN workshop on "Electrochemical Energy Conversion and Storage: Materials and Methods" at IIT Madras, Chennai, August 08-17, 2016.
10. **K. Nanaji,** U. V. Varadaraju, T. N. Rao, S. Anandan, "Porous Carbon materials for Energy Storage applications : Li-ion batteries and Supercapacitors" in ICCON 2016 at SSSIHL, Prasanthinilayam, Ananatapur, February 13-14, 2016.
11. **K. Nanaji,** U. V. Varadaraju, T. N. Rao, S. Anandan, "Ordered mesoporous carbon as an efficient anode material for Li-ion Battery application" at NCCM 2015, organized by NPL Delhi & Indian Carbon Society at New Delhi, November 28, 2015.
12. **K. Nanaji,** U. V. Varadaraju, T. N. Rao, S. Anandan, "A Hierarchical porous carbon as an efficient anode material for high power Li-ion battery" in Indo - Korean joint workshop on "Green Mobility and Energy Materials" organized by ARCI Hyderabad at Hyderabad November 26, 2015.
13. Attended a two day National seminar on "Metallurgy for Non Metallurgists" at MGIT Hyderabad organized by TRA Education & Research Foundation, January 29-30, 2015.

k. Photograph