



## Bio-derived nanostructured carbon-based materials for electrochemical sensor applications

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### Abstract:

**Statement of the Problem:** Biomass derived carbon material can act as an exclusive host template for newer electrodes which can enhance the performance of sensors. A cost effective viable production of strong, portable, sensitive and selective electrochemical sensing devices are the need of the hour for a biosensor and point of care device. It is carried out easily by bio-derived carbon structures that are synthesized by uncomplicated steps, from low-cost abundantly available renewable biomass. Depending on the properties of these new materials they can be integrated with the devices, various detection technologies can be used, where optical and electrochemical detection are the most popular. The technique is used to improve the surface properties so as to increase the electro-analytical behavior of working electrodes. This chapter includes the development of bio-based carbon materials and their application in electrochemical analysis.

### Biography

Dr. Sushma Dave received her Master of Science in 1993 and a PhD in analytical and environmental chemistry from Jai Narayan Vyas University, Jodhpur in 1999. She also completed her bachelors of Law in 2018. She has been involved continuously in the field of higher education since 1999 teaching Pure, Applied Chemistry, Biology, Solid waste management, Waste water treatment and Environmental chemistry to students of Engineering and basic sciences. She also served as a Research Associate in Soil Chemistry and microbiology Division CAZRI, Jodhpur. Currently she is working as an Associate Professor in Jodhpur Institute of Engineering & Technology, Mogra, and Jodhpur Rajasthan India. She has published and presented over 50 papers in international and national journals, conferences and participated in various workshops and training programs. Her areas of interest are Electrochemistry,

Environmental science, Nanotechnology, Soil biochemistry and bio fertilizers. She has published a number of chapters with Elsevier and Springer text books and currently working on a funded project in the proposed area.

### Publication of speakers

1. Bio-derived nanostructured carbon-based materials for electrochemical sensor applications (in press)
2. Amine mediated synthesis of nickel oxide nanoparticles and their superior electrochemical sensing performance for glucose detection (In Press)
3. Phytate phosphorus and mineral changes during soaking, boiling and germination of legumes and pearl millet
4. Stimulatory synthesis of saponin by mycorrhizal fungi in safed musli (*Chlorophytum borivilianum*) tubers

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