

## Guest Editors' Pen Picture on the Special Issue

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Welcome to the Special Issue of *ELECTROANALYSIS* entitled "EIHE-2020: Spectrum of *ELECTROANALYSIS* in India" dedicated to the International Conference on Electrochemistry for Industry, Health and Environment 2020 (EIHE-2020) held at DAE Convention Centre, Anushaktinagar, Mumbai, India during January 21–25, 2020. EIHE-2020 was the fourteenth international event organized by the Indian Society for ElectroAnalytical Chemistry (ISEAC; [www.iseac.org.in](http://www.iseac.org.in)) under the auspices of the Bhabha Atomic Research Centre, Department of Atomic Energy, India. This conference was supported by the International Society of Electrochemistry, Board of Research in Nuclear Sciences, ONGC Energy Centre and Atomic Energy Regulatory Board. This special issue of EIHE-2020 was pre-approved by the Editors of *ELECTROANALYSIS* and Wiley Publication House.



The scientific scope of EIHE-2020 was spanned over a wide range of topics not limited to sensors and biosensors; fuel cells; electrosynthesis; electrocatalysis; electrochemistry of biomolecules; Li-ion battery; supercapacitors; solar energy harvesting; corrosion; molten salt electrochemistry; development of devices; etc. This international conference had strength of 446 delegates and the scientific discussion was spanned over 21 technical sessions including 3 Inaugural Lectures; 59 Invited Talks; 11 Short Lectures; 59 Oral and 243 Poster Presentations. The American Chemical Society, Royal Chemical Society, Elsevier and ISEAC sponsored several awards to the young research scholars as a token of appreciation and encouragement. Considering the quality of research work and scope of the journal *ELECTROANALYSIS*, a designated team of Internal Subject Experts initially selected 50 Extended Abstracts from the overall presentations made in EIHE-2020 for the internal peer-review process. Among those, 39 full length manuscripts were invited for submission to

*ELECTROANALYSIS* for the standard external peer-review process, by which 3 review-articles and 21 full-length articles have been accepted for publication in this special issue. Before taking final decision, each manuscript of this special issue was independently reviewed by the Guest Editors to assure the quality of publications. The manuscripts authored by either of the Guest Editors were exclusively and independently managed by the Regular Editor (*Prof. Dr. Yoon-Bo Shim*) of *ELECTROANALYSIS*.



This cluster topical issue will be able to portray the diverse advancements of electrochemistry as presented in EIHE-2020 within the scope of the journal *ELECTROANALYSIS*. The two full-length review articles have nicely presented the state-of-the-art of electrochemical detections of tea polyphenols and electrochemical sensors modified with molecular imprinted polymers for analysis of small drugs. The third review article provides a

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perspective view on the isomerism-activity relation in molecular electrocatalysis. The full-papers have brought more diversity in this special issue. The papers related to the development of semi-implantable needle electrode for measuring partial pressure of oxygen in subcutaneous tissue; poly-amidoamine dendrimers@Fe<sub>3</sub>O<sub>4</sub> based electrochemiluminescent biosensor and polyaniline based electrochemical biosensor for independently determining liver cancer biomarkers certainly project the advancement of electroanalysis towards biosensors. Further, the independent engineering of working electrodes with metal-organic framework, inexpensive and efficient carbon-nanomaterials for determination of hydrogen peroxide, 6-mercaptopurine, ciprofloxacin, nitrofurantoin, epinephrine, alizarin carmine and ascorbic acid in biological fluids is impressive. The study of Zr-amino terephthalate modified carbon nanotube advances the electroanalysis for nitrite quantification in various water samples. The investigations on electrocatalysis for various applications with specially designed materials such as platinum nanocauliflowers, platinum-gold bimetallic microstructures co-deposited with silicate sol-gel, crystalline Fe<sub>2</sub>O<sub>3</sub> and rare earth (Pr, Nd, Sm or Gd) oxide nanorods add significance to this special issue. The paper emphasizing on the utilization of a semiconductor material for photocatalytic destruction of pollutants and photoelectrochemical water-oxidation is interesting. From the perspective of fuel cells and electrocatalysis, the papers on the mechanistic exploration on the hydrogen evolution reaction by using inverted rotating disc electrode and the role of carbon supports on the tolerance of sulphur-dioxide impurities for platinum electrocatalysts justify the quality of this special issue. Inclusion of the papers related to the design and modification of molybdenum-disulphide based electrodes in sensing as well as hydrogen evolution reactions are futuristic and advance the discipline beyond the state-of-the art. The conclusive article of this special issue beautifully demonstrates the development of membraneless paper-pencil based microfluidic electrochemical system for hydrazine fuel cell.

The Guest Editors wish to acknowledge all the delegates of EIHE-2020 for their enthusiastic participation, stimulus discussion and presentation of quality research works of the Indian Electrochemists. We

acknowledge the continuous support received from the nodal authorities and funding bodies, national and international academic partners and tremendous efforts of each organizing committee member towards the success of EIHE-2020. We are thankful to the past and present executive committee members of ISEAC for providing its solid foundation and worldwide popularity. Guest Editors, on the personal behalf and on the behalf of delegates and organizers of EIHE-2020 wish to convey sincere gratitude to the Editorial Board of *ELECTROANALYSIS*, Editorial Assistants and Wiley Publication House for providing us this prestigious opportunity and trusting on our credibility for its successful execution. We'll fail our duties, if we do not acknowledge the patience, efforts and eagerness of the authors of the manuscripts and cooperation of all the international subject experts (peer-reviewers) to uphold the quality of the manuscript and timely accomplishment of this topical special issue.

## Guest Editors



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