

Guest Editorial

It is a well known fact that, the University of Madras is a pioneer university in offering higher education through research and teaching since 1857. The Department of Physical Chemistry, School of Chemical Science is one of the vibrant Departments functioning under the School of Chemical Science, University of Madras from 1952. The Department offers specialized courses like M.Sc, M.Phil, and Ph.D in Physical Chemistry and also teaches Physical Chemistry papers to the students of other Departments in School of Chemical Science viz., Organic, Inorganic and Analytical Chemistry. In order to provide an updated and Frontier knowledge in Physical Chemistry field, we on behalf of our Department and in association with Society for Polymer Science (SPS), Chennai Chapter have organized a two-day 'International Conference on Advances in Chemistry with Specific Reference to Catalysis, Sensors, Drug Delivery and Energy Materials (ICACSEM-2020)' on 9th and 10th January 2020. I wish to record with great pleasure that the conference was a grand success with 400 National and International scholars including renowned Researchers, Scientists, Academicians, and Scholars from prominent Institutions and Research Centers and Industrialists. The invitees presented their research results through Plenary, Invites, Keynote Lectures, and also via oral and poster presentations. I am to state that the ICACSEM-2020 was an impressive forum that brought eminent scientists, reputed researchers and young scholarly minds under one umbrella with congregation of various aspects of Physical Chemistry with specific attention to Catalysis, Nano materials, Quantum Dots, Sensors, Energy Conversion and Molecular Modeling. The conference was very committed and provided a unique platform for effective interaction amongst researchers from academic and research institutions and industrial fields at both National and International level under one roof. In the two-day conference, various deliberations were organized systematically in various state-of-art topics in Physical Chemistry as detailed above.

In order to achieve this international event with collection of thoughts and ideas of reputed researchers in the field of physical chemistry more meaningful, we planned to bring out this special issue with the Indian Journal of Chemical Technology (IJCT), a premier peer-reviewed SCI indexed monthly periodical from CSIR-National Institute of Science Communication and Policy Research (NIScPR), New Delhi, India on the theme of ICACSEM-2020. This special issue is indeed one of the logical outcomes of this International event which surely benefited to the participants, particularly research scholars for their career. At this juncture, thank all authors for contributing papers, and the subject experts for reviewing them critically in accordance with the academic standing of the journal IJCT.

This particular special issue comprises of 20 articles covering various aspects of the Physical Chemistry viz. double-layer Core-Shell nanoparticles as an efficient photocatalyst, Green synthesis of *Solanum melongena* leaf extract based Zinc Oxide Nanoparticles, Photo induced charge transfer catalyst, Trigona Carbon Nanopetals/Ferrocene/Gold Nanoparticles for sensing of neurotransmitters, Fabrication of PCL/e-Tricalcium phosphate based nanoscaffolds using electrospinning technique, opto-electronic properties of Pb free perovskites for solar cell applications, energy harvesting materials, Tetrandrine derivatives for inhibition of HL60 and A549 cells, efficient poly-4-vinyl pyridine metal (V) chloride catalyst for esterification of alcohols, Nanosensor for soil nutrient testing, Clinical perspective of Breast cancer nutritional chemistry cachexia oncology, selective adsorption of bovine hemoglobin using Ni²⁺ functionalized silica nanoparticles, synthesis of disulphide appended sugar bistriazoles and SnTe-graphene oxide based nitrite sensor.

As a special mention, we place our sincere thanks and gratitude to the then Higher Education Secretaries Mr. Mangath Ram Sharma, IAS, Ms. Apoorva, IAS and the present Higher Education Secretary Dr. Karthikeyan, IAS and Mr. K. Vivekanandhan, IAS, Commissioner, Director of Technical Education and the Secretary (FAC), TANSCH. Govt. of Tamil Nadu for providing funds from RUSA and TANSCH. We also express our thanks to the Society of Polymer science (SPSI), Chennai Chapter, DST and CSIR Govt. of India for financial support. We acknowledge the University of Madras for overall support rendered for smooth conduct of this grand academic event.

We firmly believe that this special issue can inspire and motivate researchers for developing new materials towards catalysis, sensors, drug delivery and energy conversion applications. We record our sincere thanks to Dr Ranjana Aggarwal, Director, CSIR-National Institute of Science Communication and Policy Research

(NIScPR), New Delhi, India for agreeing to bring out this special issue. Certainly it is not possible to bring out this special issue on time without the dedication and essential expertise of Smt. Manju D Choudhary, Editor, Indian Journal of Chemical Technology (IJCT) and Mr. R. S Jayasomu, Chief Scientist & Editor, Indian Journal of Experimental Biology (IJEB) in finalizing the issue. It is our bound duty to appreciate and record our sincere thanks to the CSIR-NIScPR print production team for the concrete support and cooperation they rendered for bringing out this special issue successfully.

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