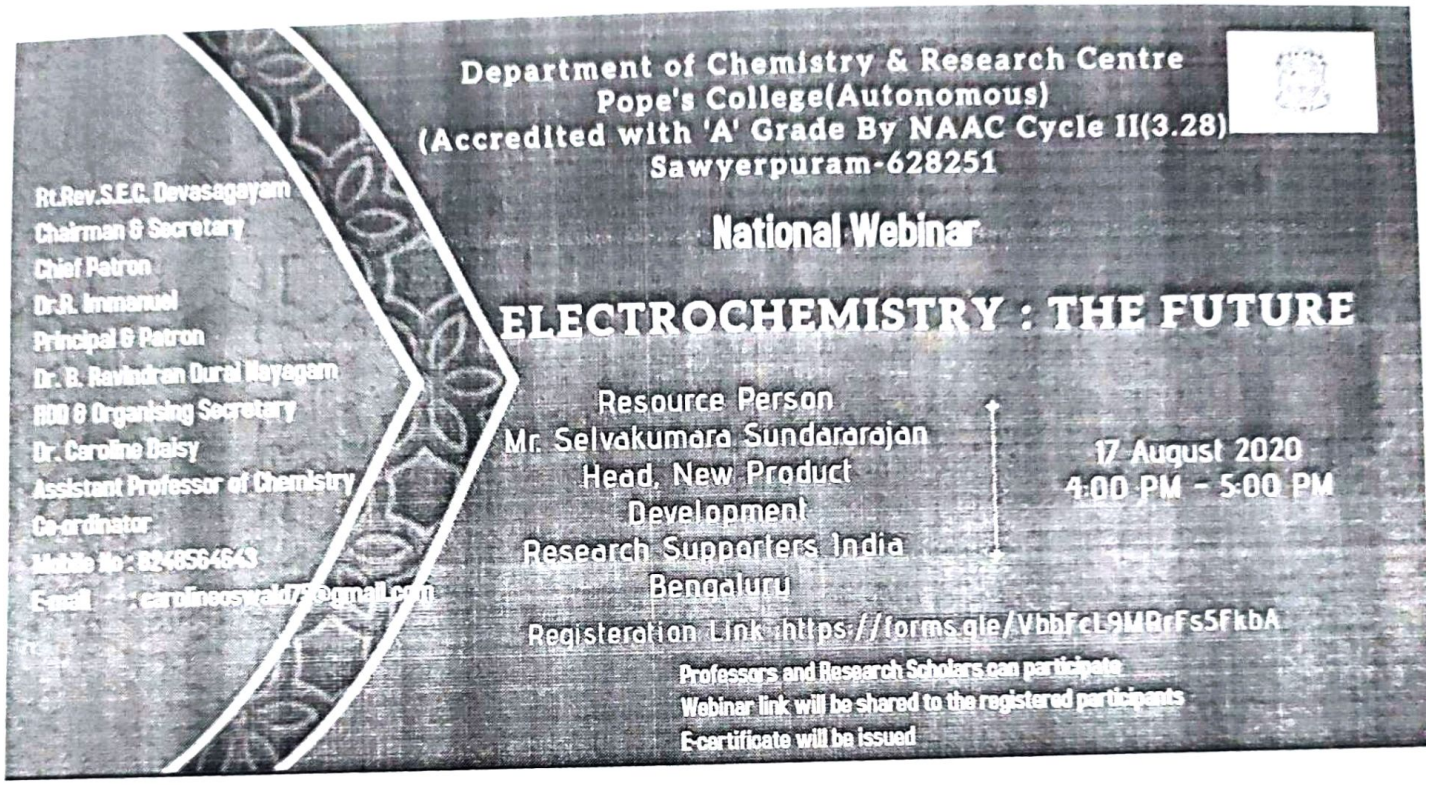
Department of Chemistry & Research Centre
Pope's College(Autonomous)
(Accredited with 'A' Grade By NAAC Cycle II(3.28)
Sawyerpuram-628251
National Webinar
ELECTROCHEMISTRY : THE FUTURE
Resource Person
Mr. Selvakumara Sundararajan
Head, New Product
Development
Research Supporters India
Bengaluru
17 August 2020
4:00 PM - 5:00 PM
Registeration Link :https://forms.gle/VbbFcL9MBrFs5FkbA
Professors and Research Scholars can participate
Webinar link will be shared to the registered participants
E-certificate will be issued
Rt.Rev.S.E.C. Devasagayam
Chairman & Secretary
Chief Patron
Dr.R. Immanuel
Principal & Patron
Dr. B. Ravindran Durai Nayagam
HOD & Organising Secretary
Dr. Caroline Daisy
Assistant Professor of Chemistry
Co-ordinator
Mobile No : 8248564643

RESEARCH DEPARTMENT OF CHEMISTRY

Pope's College (Autonomous), Sawyerpuram – 628 251

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Thoothukudi District, Tamil Nadu

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Dr. Caroline Daisy M.Sc., M.Phil., Ph.D., FICS

Coordinator, National Webinar on "Electrochemistry: The Future'

Focus of the Webinar

(Taken from My Message about this Webinar)

All our researches are oriented towards conservation of energy and mass in the areas of nano, drug design, green synthesis, characterization, energy harvests, solar cell, energy storage, batteries, electrodes, electrolytes, pollutions and so on. In the modern era of research, no research is accepted without incorporating the applications of the compound or material we prepare. At present we are in the age of evidence based study, that is without blood test or other tests like X-ray, scan etc., the doctor wouldn't prescribe a medicine. Next question arise is quality. The research community once accepted IR and 60MHZ NMR is now accepting FTIR and 300MHZ NMR only. Quality research leads to publication in higher impact journals and attracts project funds. So we are calibrated by the quality of instruments we have and application oriented projects. For example if we submit a paper by recording only NMR, it finds difficult for acceptance in journals compared with one having XRD. Similarly synthesis and characterization of a compound which has no practical application does not attract fund as well finds no journal. But if we prepare a compound and do conductance studies in the conductivity bridge and do the same in electrochemical workstation, the latter paper is published in journal with impact factor more than 5, and here one of our advisors practically achieved. Research consists of three parts viz. preparation, characterization and application. Here FTIR, UV-VIS, NMR and XRD are some of the characterization instruments. These instruments need higher initial cost along with maintenance cost but only useful for identification, that data we can get from elsewhere in nominal charges.

A major hurdle before us is fund, for that we look for the government, here I am proud to say our department has received Rs.65 lakhs of UGC fund and Rs.15 lakhs project proposals are in process. All these are possible only when our research is focused on environment, drug and energy. In the environmental aspects we do research in green synthesis, pollution and dye degradation. As for as drug is concerned we focus on synthesis of pure compounds in single crystal form, DNA binding, docking, cyclic voltammetry,

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biological studies, cancer drugs and so on. In Energy aspects electrode, solid/liquid ac/dc conductance, photocell etc. Through which we have a good number of quality publications and they are instrumental in receiving such a huge fund.

At this point electrochemistry comes to the center of attraction. Using electrochemical techniques we can synthesis, test organic and inorganic compounds by CV and polarograms of different kinds. The applications can be done by recording resistance, conductance, inductance, solid and solution behavior, pollution, dye, energy harvesting, photo and electrochemical cells and probes. Therefore electrochemical instrument can fulfill the need of a department and help about 30 research scholars to complete their research simultaneously in ease. We record an electro gram in 5 minutes and process the data in the computer later to get approximately 20 parameters. Each parameter can give a table and figure and make a way for publication, getting funds and completing research. Thus electrochemistry is the future and affordable to all. Electrochemical workstation is a maintenance free, multipurpose, portable instrument available in an affordable cost of 5-10 lakhs. Further we can lend the service of this instrument by recording CV and impedance for a reasonable amount and that amount can be used for the maintenance of the research lab and motivate the researchers.

Regards

Caroline Daisy