

Green Chemistry Seminar (CCVC) (Open to public)

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US Environmental Protection Agency



Title: " Greener Synthesis of Organics and Nanomaterials and Sustainable Applications of Nano-Catalysts "

Thursday, February 18, 4:00PM

Location: Otto Maass Chemistry Building (McGill University), RM 10

Over 35 years of research experience in management of multi-disciplinary technical programs ranging from natural products chemistry and therapeutics, to development of genosensor technology. Extensively involved in broader aspects of chemistry that includes synthesis, and chemical modification of biologically active molecules, applications and interface of chemical science with biology, solid state chemistry, bioelectronics, environmental sciences and **development of environmentally benign synthetic methods using microwaves. Recently, involved in the development of efficient technologies for greener remediation of contaminated sites, capture of mercury from coal-fired power plants and "deep desulfurization" of transportation fuels.** Long term goals are to contribute **broad expertise in chemistry to evaluate novel and safer environmental protocols in industrial chemistry** and its impact in human health and environmental sciences. Mentor for high school and college students

The presentation summarizes our recent activity in chemical synthesis involving benign alternatives, such as the use of supported reagents, and greener reaction medium in aqueous or solvent-free conditions.¹ The synthesis of heterocyclic compounds, coupling reactions, and a variety of name reactions² are the primary beneficiaries as exemplified by the synthesis of *N*-aryl azacycloalkanes, isoindoles, and dihydropyrazoles, 1,3,4-oxadiazoles, 1,3,4-thiadiazoles, 1,3-dioxanes, pyrazoles, catalyzed by basic water or polystyrene sulfonic acid (PSSA) in aqueous media in conjunction with microwave (MW) irradiation.