UNIVERSITY OF LOUISVILLE

COLLEGE OF ARTS & SCIENCES

Department of Chemistry

Brown and Williamson Series

Friday, September 10, 2021
@12:30 pm
Chemistry Building, LL 16

Ettigounder (Samy) Ponnusamy, Ph.D.

Fellow and Global Manager for Green Chemistry
MilliporeSigma

Green Chemistry at MilliporeSigma

ABSTRACT:

This presentation will cover MilliporeSigma's (The Life Science Business of Merck, KGaA, Darmstadt, Germany) Greener Chemistry Platform based on the 12 Principles of Green Chemistry and how to put them into practice to reduce resource use, human health and environmental impacts.

MilliporeSimga developed and launched DOZN™2.0, a unique web-based greener alternative scoring matrix, also known as a quantitative green chemistry evaluator based on the 12 principles of green chemistry for customers to evaluate their relative greenness of their processes. The 12 principles of green chemistry provide a framework for learning about green chemistry and designing or improving materials, products, processes and systems. DOZN™2.0 scores products based on metrics for each principle and aggregates the principle scores to derive a final aggregate score. The system calculates scores based on manufacturing inputs, GHS and SDS data which provide a green score for each substance. DOZN™2.0 is flexible enough to encompass the diverse portfolio of products ranging from chemistry to biology to material science-based products. The DOZN™2.0 system has also been verified and validated by a third party to ensure best practices are applied and also published. This new Greener Chemistry Initiative offer customers' an increased breadth of Greener Alternative products with confirmatory documentation to validate greener characteristics. Through DOZN™2.0 customers now have access to calculate the green scores of their own processes and products. This free, web-based tool provides users with even more data so that they are properly equipped to increase their sustainability. DOZN™2.0 keeps data privacy top of mind—allowing customers to score their processes/products in a safe and secure manner.

BIO:

Ettigounder (Samy) Ponnusamy completed his PhD at the University of Madras (India) in 1982 in Polymer Chemistry and postdoctoral studies at the University of Illinois at Chicago (1983-87). In 1988, he joined Sigma-Aldrich as an R&D Scientist and worked on many high value projects at various capacity. Currently Samy is the Fellow and Global Manager for Green Chemistry at MilliporeSigma (A business of Merck KGaA, Darmstadt, Germany), leading the Green Chemistry Initiatives.

Samy has over 35+ years of industrial and academic research experience in developing new products, greener process developments, polymer processing and greener manufacturing from laboratory to pilot plant scales utilizing green chemistry principles. Samy and his team developed award winning DOZN system - A Quantitative Green Chemistry Evaluator to calculate the relative greenness of chemical products/processes based on the Twelve Green Chemistry Principles. Recently released DOZN 2.0 tool for customers to use it to improve their overall sustainability. Also, Samy leads the new Greener Chemistry Consultancy Business Developments at MilliporeSigma. Samy is instrumental in expanding DOZN application to both virtual and in-lab curriculum to various academic institutions globally in collaboration with Beyond Benign. Also, Samy helped to launch Beyond Benign Organic Lab with DOZN results.

Samy is one of the Co-chairs for American Chemical Society Green Chemistry Institute's (ACS GCI) Chemical Manufacturer Roundtable and, organizes/chairs sessions at the ACS GCI's Green Chemistry & Engineering Conferences and, also participated as organizing committee member for many other international Green Chemistry Conferences. Samy is the founder of the Worldwide Green Chemistry Team at Sigma-Aldrich in 2007. Samy has published over 45 scientific papers and awarded 6 US/European Patents and, also 3 US Patents pending. Samy's work was recognized by The Academy of Science St. Louis (founded in 1856), awarded an outstanding scientist award in 2011 and inducted as a Fellow of the Academy of Science St. Louis. Also, one of the recipients of Merck Technology Award 2020 and Environment + Energy Leader, Project of the year Award 2020 for DOZN.