



## **Ettigounder (Samy) Ponnusamy, PhD**

Fellow & Global Manager, Green Chemistry

**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 (formerly Sigma-Aldrich), leading the Green Chemistry Initiatives. Samy's work was recognized by The Academy of Science St. Louis (founded in 1856), awarded an outstanding scientist award in 2011 and, also inducted as a Fellow of the Academy of Science St. Louis.

### **Research Interest:**

Samy has over 40 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. Developed greener syntheses and characterizations of various polymers for targeted drug delivery applications and several of them currently used as active pharmaceutical ingredients by pharma industries. Also Samy and his team developed 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 both inside and outside customers to use it to improve their overall sustainability. Also, Samy leads the new Greener Chemistry Consultancy Business Developments at MilliporeSigma.

Samy is one of the elected Co-chairs for ACS Green Chemistry Institute's Chemical Manufacturer Roundtable and, organizes/chairs sessions at the annual ACS GCI's Green Chemistry & Engineering Conferences and, also participated as organizing committee members for many other Green Chemistry Conferences globally. Samy is the founder of the Worldwide Green Chemistry Team at Sigma-Aldrich in 2007 and currently leading the Green Chemistry initiatives at MilliporeSigma. Samy has published over 40 scientific papers and awarded 6 US/European Patents and, also 3 US Patents pending.

## **Green Chemistry Initiatives at MilliporeSigma**

### **DOZN™-2.0 - A Quantitative Green Chemistry Evaluator**

**ABSTRACT:** MilliporeSigma created a unique web-based greener alternative scoring matrix, also known as DOZN™2.0 - A Quantitative Green Chemistry Evaluator based on the 12 principles of green chemistry. 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, Globally Harmonized System (GHS) and Safety Data Sheet (SDS) information which provide a green score for each substance and is flexible enough to encompass a diverse portfolio of products ranging from chemistry to biology-based products. The DOZN™2.0 system has also been verified and validated by a third party to ensure best practices are applied. Data privacy—users can evaluate their processes and products in a secure manner. This new Greener Chemistry initiative offer customers' an increased breadth of Greener Alternative products with confirmatory documentations to validate greener characteristics.