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Applications and education of green analytical chemistry

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Green chemistry is essentially a way of thinking rather than a new branch of chemistry and is about utilizing a set of principles that seek to reduce the environmental impact of chemical processes and products. It involves pulling together tools, techniques and technologies that can help chemists and chemical engineers in research, development and production to develop more eco-friendly and efficient products and processes, which may also have significant financial benefits. A major thrust of the green chemistry research activity is the development of new analytical methodologies. For example, new analytical tools are needed for real-time industrial process monitoring and for preventing the formation of toxic materials. The growing field of process analytical chemistry is aimed primarily at obtaining the analytical data close to the production operation. Such capabilities offer improved process control while minimizing its environmental impact. The goal of green analytical chemistry is to use analytical procedures that generate less hazardous waste and that are safer to use and more benign to the environment. Developing new analytical methodologies and modifying an old method to incorporate procedures that either use less hazardous chemicals or use lesser amounts of hazardous chemicals. There are various green analytical methodologies available such as (i) ultrasound (ii) microwave-assisted extraction (iii) supercritical fluid extraction and superheated (iv) water extraction (v) membranes (vi) cloud point extraction (vii) greening through screening (viii) Solid-phase micro extraction for the analysis in the field of analytical/bio-analytical sciences.

Biography

Suvardhan Kanchi has completed his PhD at the age of 29 years from Sri Venkateswara University and Postdoctoral studies from Feng Chia University (Taiwan) and Durban University of Technology (South Africa). He is the Research Scientist at Durban University of Technology, a premier Technology University in African continent. He has published more than 25 papers in reputed journals and has been serving as an editorial board member of repute.

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