Science Café Announcement

Free and open to public

GEORGIA SECTION

Thursday, July 20, 2017

"Green chemistry principles and the application: Continuous synthesis of pharmaceutically relevant molecules"

Speakers:
Ms. Deborah Ortiz (*Physical Scientist - US Environmental Protection Agency*)
Mr. Zachary Campbell (*Graduate Student, North Carolina State University*)

Location:
Condesa Coffee
Old Fourth Ward
480 John Wesley Dobbs Ave
Ste 100, Atlanta, GA 30312
Directions: **Click Here**

6:30 pm Meet and mingle
7:00 pm Talk

RSVP by 5:00 pm on Monday, July 17, 2017 at

https://goo.gl/cA7Psh

Abstract

General Green Chemistry : Green chemistry includes 12 principles which can also be considered as a response to the need to reduce the amount of waste generated from academic or industrial chemistry processes as well as reduce the quantities of raw materials utilized. In this presentation, the 12 principles of green chemistry will be explained.

Green Chemistry Principles of the Continuous Synthesis of Pharmaceutically Relevant Molecules: Batch processes have traditionally been used for the synthesis of complex molecules in the chemical and pharmaceutical industries. However, such processes often involve high cost, issues with waste, and lost time due to scale up and batch scheduling. For these reasons, continuous flow technologies and processes are becoming increasingly relevant, as companies look to improve process profitability and sustainability. Continuous flow reactors offer numerous advantages over their batch counterparts, including improved heat transfer and mixing, the potential for greater yields with shorter reaction times, greater inherent safety, ease of process intensification, and ease of increasing process scale, among others. The use of continuous flow technologies will be discussed for the following two synthetic reactions: (1) rhodium-catalyzed cyclopropanations and (2) indium-catalyzed ring-opening-cyclization (Homo-Nazarov) reactions. For these syntheses, 90%+ yields were achieved in continuous flow with relatively short reactor residence times, while using an environmentally benign solvent and minimal catalyst loadings.