



ACS
Chemistry for Life®

OCACS Environmental Group Bimonthly Presentation

PFAS BASICS: An Overview of Chemistry, Sources, Regulations and Analysis

**Mr. Vanh Phonsiri
Principal Environmental Specialist,
Orange County Sanitation District**

Thursday, March 26th, 2020 at 7:30 pm

Biography

Mr. Vanh Phonsiri is a Principal Environmental Specialist at the Orange County Sanitation District (OCSD) - Analytical Chemistry Laboratory. He specializes in LC-MS/MS analysis, sample extraction, and method development for contaminants of emerging concern (CECs) in various environmental matrices. Vanh oversees projects involving CECs such as pharmaceuticals and personal care products (PPCPs), domoic acid, and fipronil using Liquid Chromatograph Tandem Mass Spectrometry. His current project focus is on PFAS method development for wastewater and biosolids. Mr. Phonsiri holds a Bachelor's degree in Chemistry and a Master's degree in Environmental Engineering.



Abstract

Per- and polyfluorinated alkyl substances (PFAS) are a topic of current and growing interest in the global scientific community. PFAS are a family of synthetic compounds containing thousands of chemicals formed from carbon (C) chains with fluorine (F) attached to these chains. The C-F bond is the strongest bond in nature and is responsible for the most unique and useful properties of these compounds. They are present in many consumer products, like waterproof clothing and kitchenware, and a host of other products,

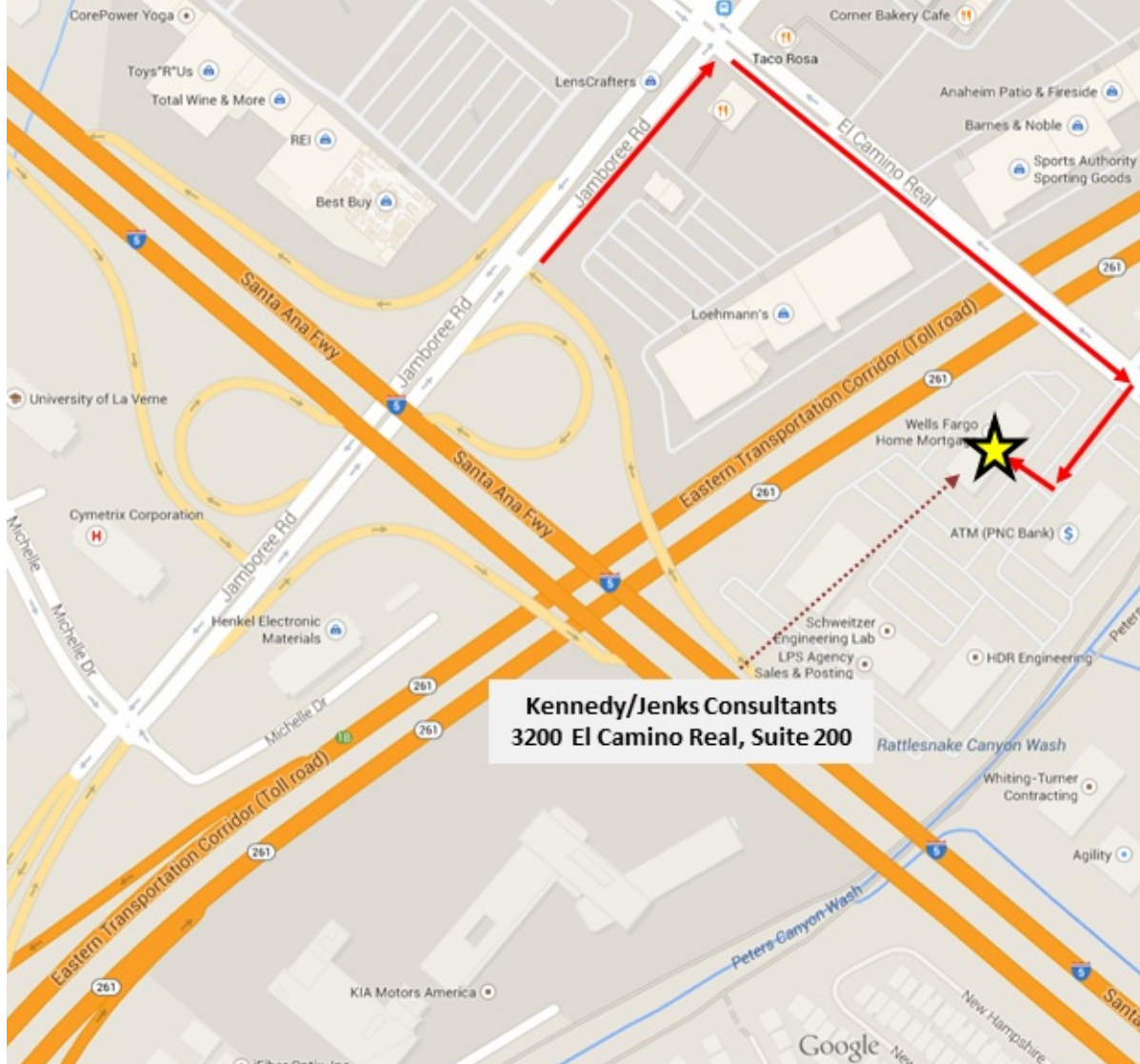
including firefighting foams used by the military and airports nationwide. PFAS are persistent toxic chemicals ubiquitous in our environment, and a number of PFAS have been found in sources of drinking water. While the Environmental Protection Agency (EPA) has considered PFAS regulation in the past few years and has set a non-binding lifetime health advisory for two PFAS chemicals, PFOA and PFOS, in drinking water at 70 parts per trillion (ppt), they have not yet established maximum contaminant levels (MCL). California has been especially active on PFAS regulation in 2019 and looks to continue that trend in 2020. The State Water Resources Control Board (SWRCB) has set drinking water notification levels (NLs) for PFOS and PFOA at 6.5 ppt and 5.1 ppt, respectively. There is currently no consensus “best method” for all environmental matrices. The EPA published Method 537 in 2008 with a recent update in 2018 and, recently published Method 533. These methods are applied to drinking water matrices only. Several other methods have been published for PFAS in non-potable and solid matrices including ISO Method 25101, ASTM D7979 and D7968; however, they have not gone through the multi-laboratory validation. EPA is in the process of validating a number of SW-846 methods with various analytical techniques and parameters for different matrices. The lack of validated methods has left stakeholders with the challenging job of navigating their options and making the right choice for their project objectives. This presentation will provide an overview of PFAS nomenclature, uses, major sources in the environment, and associated toxic effects on humans. This presentation will also aim to provide clarity through a comparison of methods and a discussion about analytical parameters and their potential impact on data quality. Lastly, the presentation will include information of what is currently available in terms of published methods versus methods under development.

Location

Kennedy/Jenks Consultants, 3200 El Camino Real, Suite 200, Irvine, CA 92602

To Register or for more information

Contact Dr. Ganesh Rajagopalan at RGanesh@KennedyJenks.com by Monday, March 23rd, 2020.



6 C Carbon 12.0107	2 4	1 H Hydrogen 1.00794	1	99 Es Einsteinium (252)	2 8 18 32 29 8 2
12 Mg Magnesium 24.3050	2 8 18 18 7	53 I Iodine 126.90447	2 8 18 18 7	16 S Sulfur 32.066	2 8 8 6
22 Ti Titanium 47.867	2 8 10 2	88 Ra Radium (226)	2 8 18 32 18 8 2	39 Y Yttrium 88.90585	2 8 8 18 9 2

Get Involved & Support OCACS

If you want to network with over 1300 chemists in Orange County, host a technical tour, speak at one of our dinner meetings or science cafes, explore leadership opportunities, or advertise with our Section, please visit our [website](http://www.ocacs.org) or E-mail us at OCACSLocalSection@gmail.com and OCACSChair@gmail.com.

We would love to hear from you!

OCACS 2020 Executive Board & Committees

Chair	Dr. Richard Deming	rdeming@fullerton.edu
Chair-Elect	Dr. Rabin Lai	rabin@academysavant.com
Past Chair	Dr. Keisuke Ikehata	kikehata@txstate.edu
Treasurer	Mr. Robert Cohen	cohenr@sbcglobal.net
Secretary	Dr. Beverly Matsuda	BevMatsuda@iusd.org
Councilor	Dr. Rabin Lai	rabin@academysavant.com
Councilor	Mr. Robert Cohen	cohenr@sbcglobal.net
Councilor	Dr. Sanda Sun	sanda.sun@gmail.com
Alt. Councilor	Dr. Mark Hanning-Lee	markhl@prodigy.net
Alt. Councilor	Dr. Carol Grimes	cgrimes@gwc.cccd.edu
Alt. Councilor	Dr. Sandra Thompson	OCACSWCC@gmail.com

Education Committee	Dr. Carol Grimes	cgrimes@gwc.cccd.edu
Environmental Committee	Dr. Ganesh Rajagopalan	rganesh@kennedyjenks.com
Program Committee	Mr. Robert Cohen	cohenr@sbcglobal.net
Younger Chemists Committee	Ms. Monica Gutfinger	monicagutfinger@gmail.com
Women Chemists Committee	Dr. Sandra Thompson	OCACSWCC@gmail.com
Government Affairs Committee	Dr. Mark Hanning-Lee	markhl@prodigy.net
Kids & Chemistry	Dr. Sanda Sun	sanda.sun@gmail.com
Awards Committee	Dr. Sanda Sun	sanda.sun@gmail.com
Webmaster	Dr. Rabin Lai	rabin@academysavant.com