Tiny invention could revolutionize analytical chemistry

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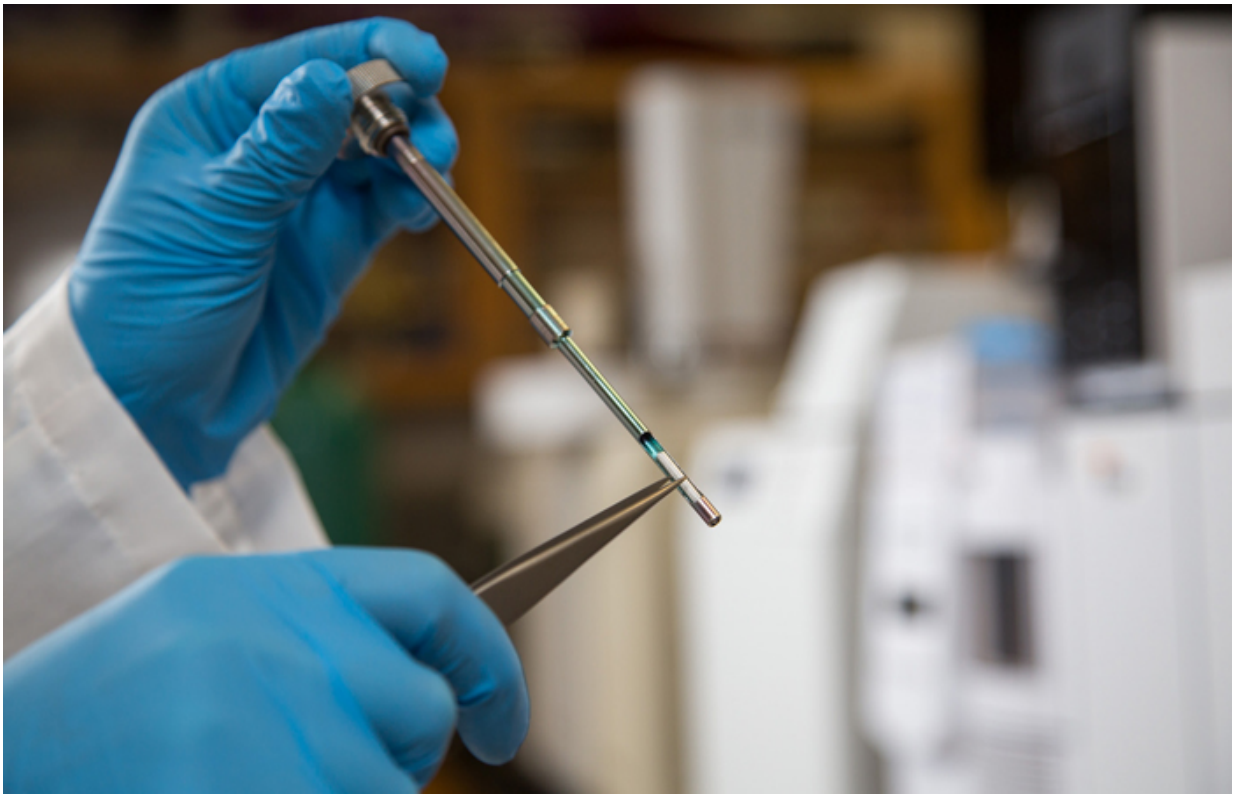

Credit: Florida International University

Just 2 centimeters long and 2 millimeters in diameter, a Florida International University (FIU) researcher has invented a sorbent tube that could bring analytical chemistry to the masses. The simple yet highly sensitive device is designed to sample volatile chemicals in the

air, your home, food and even your body.

Called the CMV (capillary microextraction of volatiles), the device can sample air by drawing just a small amount of air through it. When sent to a laboratory for analysis using gas chromatography-mass spectrometry, volatile organic compounds (VOCs) are identified including those associated with the presence of bacteria, mold, carcinogens, and much more. The CMV could potentially be used in medical diagnostics simply by breathing through it—offering an inexpensive, non-invasive method for disease-detection by detecting VOCs in lungs.

Because of its portability, low cost and proven sensitivity, the CMV can impact nearly all industries including medicine, law enforcement, shipping, insurance, and even private in-home use. FIU Inventor Jose Almirall, a chemist and director of the FIU International Forensic Research Institute, and alumnus Digno Caballero have formed IAD-x, LLC to further develop the device and expand research with the intent to put analytical chemistry within reach for the average person.

Their efforts were on display early this spring at the eMerge Americas technology conference at the Miami Beach Convention Center earlier this year—a platform connecting revolutionary startups, cutting-edge ideas, global industry leaders and investors worldwide.

The IAD-x collaboration is revolutionizing the field of analytical chemistry while helping to foster economic growth and employment opportunities. The team was selected by the National Science Foundation to participate in the Innovation Corps Teams Program (I-Corps) this past summer. The program connects NSF-funded researchers with the business community and entrepreneurs to promote innovation and technology transfer. Although initially developed to detect explosives, additional applications and potential markets became apparent through the NSF-funded I-Corps customer discovery process.

"I recommend any faculty member wanting to explore commercialization of science and technology to consider going through the I-Corps program," Almirall said. "The I-Corps team of a student or post-doc, a business mentor and the PI is provided with the tools necessary to begin to evaluate whether a scientific discovery can be turned into a viable business."

Still in the early stages of development, the researchers are exploring market opportunities for industry applications. All of their efforts are concentrated at FIU's Modesto A. Maidique Campus in Miami, Fla. where IAD-x is being incubated.

Provided by Florida International University