Nanocrystals will help detect methanol and other alcohols
31 March 2020

A distinctive feature of the new technology is that the sensitive material, cobalt oxide, is grown directly on the sensor's electrodes, which enables creating a sensor in a matter of minutes, skipping a few steps in the manufacturing process.

"The cobalt oxide in morphology of nanoflakes make the device much more sensitive to alcohol vapors and, therefore, highly instrumental in medical diagnostics, as the sensor helps assess a patient's health condition by identifying the markers of various diseases in the exhaled air," explains Fedor Fedorov, a senior research scientist at Skoltech. Also, the new sensor can help identify toxic substances in the ambient air.

"This technology is another step forward in studying the selective detection of hazardous substances, such as methyl alcohol. Our recent research has enabled detecting a methanol in methanol-and-ethanol mixture that, some time ago, was found in the hawthorn extract that caused a series of severe poisonings in Russia. Our findings can also be applied to other medications containing ethyl alcohol and a broad variety of other products," commented the study lead, professor Albert Nasibulin.


Provided by Skolkovo Institute of Science and Technology