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Korean team develops detector for bad breath

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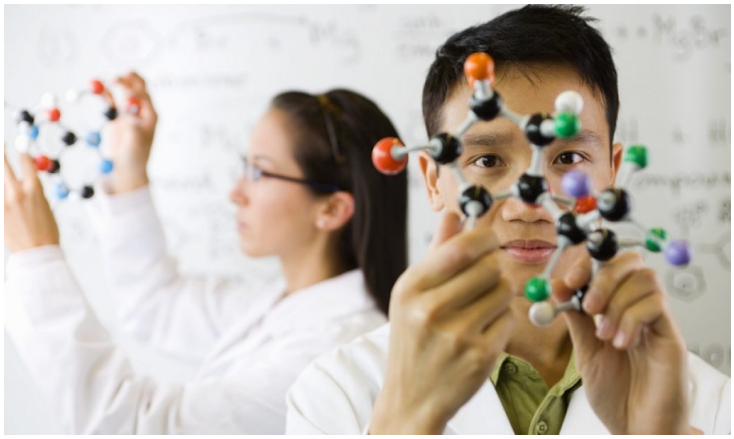

A team of scientists in South Korea has developed a sensor that detects bad breath. The sensor detects tiny amounts of hydrogen sulfide gas, the compound responsible for bad breath, in human exhalations.

The team made use of lead (II) acetate, a chemical that turns brown when exposed to hydrogen sulfide gas. On its own, the chemical is not sensitive enough to detect trace amounts of hydrogen sulfide in human breath, at concentrations below two parts per million. Hence, the researchers anchored lead acetate to a three-dimensional (3D) nanofiber web, providing numerous sites for lead acetate and hydrogen sulfide gas to react.

By monitoring a color change from white to brown on the sensor surface, the researchers could detect hydrogen sulfide at concentrations as low as 400 parts per billion with the naked eye, in only one minute. In addition, the color-changing sensor detected traces of hydrogen sulfide added to breath samples from ten healthy volunteers, validating the specificity of the sensor in a real-life setting.