A phone so smart it sniffs out disease

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A research consortium headed by Professor Hossam Haick of the Technion-Israel Institute of Technology is developing a product that, when coupled with a smartphone, will be able to screen the user's breath for early detection of life-threatening diseases.

Funded by a grant from the European Commission, the SNIFFPHONE project will link Prof. Haick's acclaimed breathalyzer screening technology to the smartphone to provide non-invasive, fast and cheap disease detection. It will work by using micro- and nano-sensors that read exhaled breath and then transfer the information through the attached mobile phone to an information-processing system for interpretation. The data is then assessed and disease diagnosis and other details are ascertained.

The technology is supported by a recent €6 million (US$6.8 million) grant to the consortium to expand the "electronic nose" breathalyzer technology that Prof. Haick has been developing since he joined the Technion in 2006. That technology can identify individuals from the general population who have a higher likelihood for contracting a specific disease, and treat them in advance or at an early stage.

The entities participating in the winning consortium include Siemens; universities and research institutes from Germany, Austria, Finland, Ireland and Latvia; and Israeli company NanoVation-GS Israel. NanoVation-GS is a Technion spin-off headed by Dr. Gregory Shuster and Sagi Gliksman, who are both graduates of Prof. Haick's laboratory. Prof. Haick serves as Chief Scientific Officer.

"The SNIFFPHONE is a winning solution. It will be made tinier and cheaper than disease detection solutions currently, consume little power, and most importantly, it will enable immediate and [early diagnosis](#) that is both accurate and non-invasive," says Prof. Haick. "Early diagnosis can save lives, particularly in life-threatening diseases such as cancer."

Prof. Haick, a member of the Technion Faculty of Chemical Engineering and a researcher at the Technion's Russell Berrie Nanotechnology Institute, is recognized in the scientific and academic world for his "[electronic nose](#)" research. He has received more than 40 prestigious awards and honors, including the Marie Curie Excellence Award, the ERC (European Research Council) Award, the Discovery Award of the Bill & Melinda Gates Foundation, and the Halevy Award for Innovative Applied Engineering. He was made a Knight of the Order of Academic Palms by the French government, and has been chosen for numerous "best of" lists including the MIT Technology Review's TR35 (listing the world's top 35 young scientists).

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