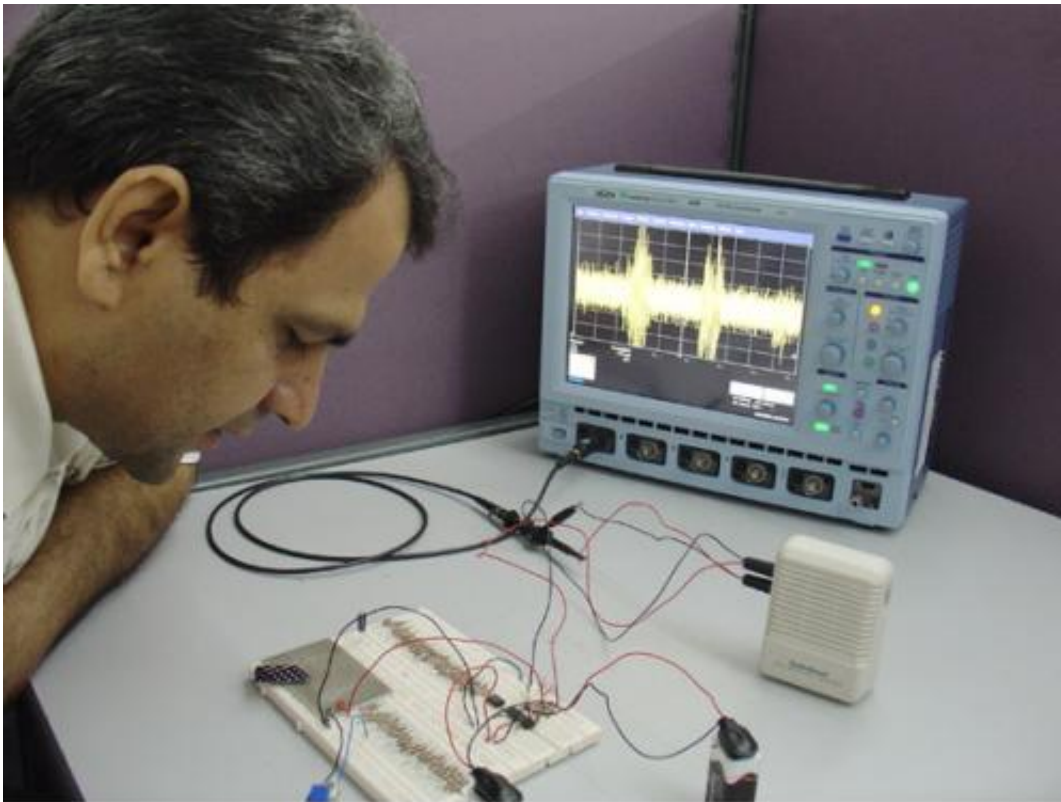


Enterprising engineers build world's smallest microphone

January 5 2012, by Bob Yirka



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(PhysOrg.com) -- Imagine what you could do with a microphone so small, it's almost invisible to the naked eye. Clearly there would be practical uses, such as in creating hearing aids that no one would notice, or devices that could be applied with a mild adhesive on or near the

mouth or jaw bone to allow for instant communications via Bluetooth technology; but what of other more clever applications, such as always-on implanted heart monitors or super-sensitive devices that could be used as hidden monitors to detect intruders or the presence of others for those with vision impairments.

All of these things and more are likely on the way as research engineers continue to invent new ways to build ever smaller microphones. The new record holders are Bahram Azizollah Ganji, of Noshirvani University of Technology, in Iran, who has built a microphone that is just a half mm square, or put another way, just 700 square microns, and Bosch Sensortec GmbH, who apparently have made one that is roughly the same size. Either way, these microphones are tiny; so tiny most people wouldn't notice them at all unless one was sitting alone on a pure white backdrop. Perhaps just as important, the tiny new microphones appear to be both highly sensitive and tiny power consumers.

The tiny microphone market is huge, with some 685 million of them in various sizes and shapes sold in 2010 alone. Currently they are used in phones, electronic notepads, research equipment, computers, cameras, and a myriad of other devices (including spy equipment no doubt). But the rush is on to make them ever smaller, which should not only allow for smaller sized devices such as cell phones, but new uses for them altogether. Imagine a microphone placed strategically on either side of a person's mouth, allowing someone listening to them on a dual speaker phone to hear their voice in stereo, or what if such microphones were to be embedded into the very construction elements of buildings, allowing people to speak to one another from their offices without having to use a phone at all, assuming they were all connected to a voice activated computer system of course. The possibilities seem almost endless.

Some industry analysts, such as the trend watchers at IHS iSuppli, say that the tiny [microphone](#) market has more than doubled in just the past

year, and expect such growth will not just continue, but grow. Thus, the development of ever tinier microphones is not just cool, it's likely to be extremely lucrative.

More information:

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