



## Breaking News

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### **From Physical Rehab Rooms to Symphony, Delsys Biosensor Gives Insight into Human Emotions**

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The study of human emotions has been under way for many years. Psychologists and other researchers have been working hard to understand the complexities of human affective communication.

Now progress is being made in this area by Delsys, Inc. Located in Boston, Mass., Delsys specializes in manufacturing precision surface electromyography (EMG) equipment and physiological sensors to measure human emotional and physical responses.

"Our special sensor system is taking research in this area to the next level," explains Prof. Carlo De Luca, president and chief executive officer of Delsys. "We are very excited to be at the forefront of such an exciting new way to learn about emotions. This is just the beginning of what will be a great journey." Funding to commercialize Delsys' biosensor technology came not from venture capitalists but from over a dozen SBIR contracts from NIH, NASA, and DOD, according to the Prof. De Luca. Delsys has sold their products in over 40 countries worldwide.

Delsys' sensor systems are designed by Prof. De Luca, who is also the director of the Neuromuscular Research Center at Boston University. He has gained recognition for developing innovative technology for evaluating changes in the performance of muscles in athletes, physically disabled, and astronauts.

Recently, Delsys biosensors were used in an experiment that involved a Boston Symphony Orchestra performance. Dr. Teresa M. Nakra of Immersion Music, who coordinated the project, said "I have incorporated Delsys EMG sensor technology in music projects, including live experiments involving conductor Keith Lockhart of Boston Pops Orchestra, the Boston Philharmonic and many other performances featured on CNN Headline News, NPR, the BBC World Service, and the Discovery Channel, among other news organizations.

"The unique technology that Delsys offers provides me with a detailed, high-resolution image of muscle activations of a live human performer in the intense process of making music," said Dr. Nakra.

"The sensors are designed to measure a person's physical performance and response to emotions. They specifically monitor muscle tension, body movements, heart beats, and other physiological evidence of emotion," explains Prof. De Luca. "By conducting this experiment we can use the gathered information to see how the dynamics of the conductor affects the richness and tonality and emotional character of the music. By placing sensors on the audience, it would be possible to also monitor their emotional response."

Delsys has become a leader in undertaking research projects in areas involving health, emotions and comfort. Another recent collaborative project involved the design of proprietary high-tech material based next generation office chairs for Technogel.

The development of Delsys' sensors used in these experiments is just one step in this journey. Delsys also plans to continue new projects in the works for measuring the muscle performance of patients undergoing rehabilitation, and for sensing nerve toxins in the body before any symptom is displayed.

On the web: [www.delsys.com](http://www.delsys.com)

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