

FOR IMMEDIATE RELEASE

Tohoku University and Hitachi prototyped an Ultra-Compact sized Near-Infrared Light brain measurement equipment

- - Realize the simultaneous measurement to multi person's brain activities and real-time monitoring by utilizing the dedicated LSI - -

Tokyo, Japan, Sept. 14, 2011 – Tohoku University and Hitachi, Ltd. (TSE:6501/NYSE:HIT) today announced that they succeeded in the development of a prototype of the ultra-compact size and light-weight near-infrared measurement device which allows to measure blood volume changes accompanied with brain activities in the frontal lobe. This project is a part of Japan Society and Technology Agency's "Development of Advanced Measurement and Analysis Systems" program. This program promotes the development of advanced measurement and analysis technology, in order to meet the needs of frontier research fields and industrial production sites. This project was led by Professor Ryuta Kawashima, Tohoku University. For the successful development, Tohoku University provided the necessary elements based on its brain functional imaging knowledge, while Hitachi developed the fundamental system architecture and the system configuration of this prototype.

This prototype equipment brings the easy-measuring capability for the blood volume changes on a frontal lobe part under the daily life condition, including in school, at home, in the office. Through this innovative result, Tohoku University and Hitachi expect to contribute in the various scientific research fields, such as cognitive science, psychology, pedagogy and brain science.

This prototype equipment is composed a wireless head-set and bundled software which brings capability for real-time monitoring. The newly designed wireless head-set is developed for focusing to measurement of blood volume changes induced by the brain activity in the frontal lobe. The dedicated LSI which newly developed for the prototype contribute to the shrinking dimension for signal processing to approximately 10%, compared with the current Hitachi product, and to realize the light weight Headset, approximately 90g, by succeeding to complete signal processing inside of the Headset without outside computer processing. Also, newly developed software displays up to 20 persons' s measured data simultaneously on one computer and compiles into a relational database at once.

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This development is expected to be used for the most advanced research fields, such as "social brain science", the mechanism of the cross-interactions among brains in society. Professor Kawashima and his colleagues will verify the ability of the proto-typed equipment and will proceed this particular research field with contribution of the equipment.

Outline of the project

Japan Society and Technology Agency's "Development of Advanced Measurement and Analysis Systems" program promotes the development of advanced measurement and analysis technology, in order to meet the needs of frontier research fields and industrial production sites. Ryuta Kawashima, Professor of Tohoku University, leads this project, "System Development Program for Advanced Measurement and Analysis" in the project of "Development of Advanced Measurement and Analysis Systems" as project leader. Takeshi Ogino, the total solution systems div. of Hitachi, is also working as sub-leader, with Tsuguo Sawada, Professor emeritus of Tokyo University, as supervisor for total project coordination.

About Tohoku University

Tohoku University, located in Sendai, Japan, was established 1907. It's one of the leading universities with its philosophy "*Research First*" while maintaining an "*Open-Door*" policy in order to emphasize "*Practice-Oriented Research and Education.*" Tohoku University is contributing to establishing a just and peaceful society, through its innovative research activities. For more information on Tohoku University, please visit the website at <http://www.tohoku.ac.jp/english/>.

About Hitachi, Ltd.

Hitachi, Ltd., (NYSE: HIT / TSE: 6501), headquartered in Tokyo, Japan, is a leading global electronics company with approximately 360,000 employees worldwide. Fiscal 2010 (ended March 31, 2011) consolidated revenues totaled 9,315 billion yen (\$112.2 billion). Hitachi will focus more than ever on the Social Innovation Business, which includes information and telecommunication systems, power systems, environmental, industrial and transportation systems, and social and urban systems, as well as the sophisticated materials and key devices that support them. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

About Japan Society and Technology Agency

Japan Science and Technology Agency (JST) is an independent administrative agency under the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). With its budget of about \$1.4 billion, JST implements the Science and Technology Basic Plan of the government of Japan, comprehensively supporting the entire innovation process from the creation of knowledge to the practical application of research achievements in society. In addition, JST promotes science literacy and communication to enhance mutual understanding between scientists and the general public. For more information on the JST, please visit to JST's website at <http://www.jst.go.jp/EN/index.html>

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