



Otsuka Medical Devices Co., Ltd.



Pioneer Corporation

For Immediate Release

**Otsuka Medical Devices and Pioneer Form
an Alliance in the Medical Endoscope Business**

Japan, October 29, 2012—Otsuka Medical Devices Co., Ltd. (“OMD”), a wholly owned subsidiary of Otsuka Holdings Co., Ltd., and Pioneer Corporation announced today that they have reached an agreement to form a business alliance for the joint development of an innovative endoscope for medical use (“Medical Endoscope”).

Toward the commercialization, Pioneer intends to make use of its ultra-sensitive imaging technology based on HEED-HARP technology* to develop a camera unit of Medical Endoscope jointly with OMD, and OMD plans to sell the Medical Endoscope using this camera unit worldwide. Both companies recognize the usefulness of applying HEED-HARP technology in devices such as ultra-thin diameter endoscopes and wireless endoscopes, because it enables the clear imaging of objects under dim lighting conditions.

* Please refer to page 3 of this press release for details about HEED-HARP technology.

OMD President and Representative Director, Hiroshi Shirafuji, made the following comments:

“By incorporating Pioneer’s HEED-HARP technology in a Medical Endoscope, I believe we can succeed in developing a revolutionary new endoscope. We will also promote this business alliance for our global business strategy with a view to applying these technologies in our other existing business.”

Pioneer President and CEO, Susumu Kotani, also made the following comments:

“In our medium-term plan, which we announced on November 29 last year, we set out to enter and develop new business fields. One of these fields is medical- and health-related devices, and we plan to enter the field by applying the company’s proprietary imaging and optical technologies. We believe that by combining our ultra-sensitive imaging technology with the expertise and technologies that OMD has in the medical devices field, this alliance will lead to the creation of a path-breaking new products.”

Through this alliance, both companies plan to move forward with the development of a minimally invasive Medical Endoscope to reduce patients’ physical burden from surgery.

Company Profile

Otsuka Medical Devices Co., Ltd.

Established:	February 15, 2011
Capital:	4 billion yen (as of March 31, 2012)
Representative:	Hiroshi Shirafuji, President, Representative Director
Head Office:	2-9, Kanda-Tsukasa-cho, Chiyoda-ku, Tokyo 101-0048 Japan
Business Description:	Integration of all business activities directly and indirectly related to the Otsuka Group's medical device business

As the company in charge of the Otsuka Group's medical device business, OMD is carrying out research and development as well as the marketing of products designed to meet as yet unmet needs in medical practice. The company is working to contribute to the health of people around the world under Otsuka's corporate philosophy: "Otsuka-people creating new products for better health worldwide."

Pioneer Corporation

Established:	May 8, 1947
Capital:	87.257 billion yen (as of March 31, 2012)
Representative:	Susumu Kotani, President and CEO
Headquarters:	1-1, Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0031, Japan
Business Description:	Car Electronics Business, Home Electronics Business and Others

Guided by its corporate philosophy, "Move the Heart and Touch the Soul," Pioneer Corporation has 2015 Vision : "Spread the smiles. Feel the vibes. Share the Passion. Pioneer engages you anytime, anywhere." Pioneer will offer benefits to customers, business partners, and society with services and products developed from its leading-edge technologies.

About HEED-HARP Technology

HEED-HARP technology employs an image sensor that combines the groundbreaking High-efficiency Electron Emission Device (HEED), a thin electron-source array developed by Pioneer, with the High-gain Avalanche Rushing amorphous Photoconductor (HARP), a world-leading, ultra-sensitive, photoelectric conversion film primarily developed by the Science & Technology Research Laboratories of the Japan Broadcasting Corporation (NHK).

The HEED technology features outstanding properties, including the ability to stably release electrons at a low drive voltage via a planar cold cathode electron source, which was discovered by Pioneer. The device is a high-efficiency, active drive-type electron-source array that has been integrated with LSI driven circuits.

The HARP provides high-sensitivity that enables vivid image capturing under dim lighting conditions equivalent to a moonlight night. The HARP has already used in reporting at scenes of accidents, earthquakes and other disasters that have occurred at night. The miniaturization of HARP cameras is expected to enable medical applications.

Ultra-sensitive cameras incorporating HEED and HARP technologies can be used for endoscopes as well as a wide range of other applications. As such, these cameras have tremendous potential in the healthcare field.

【Photograph taken by the HEED-HARP camera】



The HEED-HARP camera can take a vivid photograph without digital correction, even under conditions as dark as a moonlight night.

Photograph conditions:

Surrounding illumination: 0.6 lux (about the same as a moonlight night)

Camera frame rate: 30 frames per second