

Serving Society through Innovation and Creativity

IN recent years, Japanese universities have been strongly encouraged to connect research results with industrial applications. Since its founding in 1897, Kyoto University has contributed to the advancement of industry and society by fostering talented human resources and pursuing innovative research to meet society's needs.

To cite one example, Dr. Sakuro Tanabe is known as one of the founders of modern Japanese civil engineering. In the early days of modern civil engineering, Dr. Tanabe's Lake Biwa Canal Project constructed a new canal connecting Kyoto City with Lake Biwa. The achievements of that project later led to the construction of Japan's first hydroelectric power plant, and contributed to the revitalization of industry in Kyoto, which had fallen into a decline after the Meiji Restoration. Another notable example is Dr. Ichiro Sakurada, who invented Vinylon, the first Japan-made synthetic fiber, in 1939. Vinylon greatly relieved the hardships caused by a lack of cotton in the wake of the Second World War.

Dr. Isamu Akasaki, who was awarded the 2014 Nobel Prize in Physics for the development of a blue light-emitting diode (LED), was also a Kyoto University graduate. In a commemorative lecture delivered at his honorary doctorate conferment ceremony in May 2015, Dr. Akasaki said "I remember the time when, as a new KU student, I heard the news of Dr. Hideki Yukawa receiving the 1949 Nobel Prize in Physics. I vowed that I too would accomplish something unprecedented—even a small feat. This led me to my research on the blue LED." Kyoto University has a long tradition of valuing research based on new ideas and concepts, and that innovative spirit has been the driving force behind many new discoveries and inventions.

This distinctive academic culture is also behind Kyoto University's dynamic engagement in industry-academia collaboration relating to



iPS cell research. iPS cells are a type of stem cell developed by Dr. Shinya Yamanaka in 2006. In recognition of that accomplishment, Dr. Yamanaka was awarded the 2012 Nobel Prize in Physiology or Medicine. Kyoto University's Center for iPS Cell Research and Application (CiRA) has launched many collaborative research projects with leading pharmaceutical companies in Japan and overseas. The university's Graduate School of Pharmaceutical Sciences has also established a new research center for the development of new drugs using iPS cells.

This issue features reports on several of our industry-academia collaboration projects centering on iPS cells or other areas of medicine. The articles, written by our university's researchers themselves, are not only interesting from a science and technology point of view, but are also of general interest due to the wealth of new ideas and concepts they contain. Reading the features, I feel proud of our scholars, and of our university's tradition of academic freedom. As always, we are limited by the size of this publication, and the research covered herein represents only small part of Kyoto University's activities. I hope that you will find this issue interesting, and that it will convey a sense of the pioneering spirit that drives our research.

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