

DSU Announces First-Ever Intellectual Property Transfer

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DSU has announced the transfer of an intellectual property created by its optics scientists to a technology company for the development of a device for use in hospitals and laboratories.



Dr. Nouredine Melikechi said Dr. Yuri Markushin, DSU senior research scientist, has been instrumental in the work that has led to the intellectual property transfer from DSU to Photon Machines.

DSU has reached an agreement with Photon Machines, Inc., in which a Laser-Induced Breakdown Spectroscopy-Tag Method (LIB-Tag) developed from the University's optics research work will be used in the creation of laser technology that can be used in hospitals and labs for diagnostic work.

DSU President Harry L. Williams made the announcement during a Feb. 23 media event held in the Hardcastle/Selby Conference Room in the Administration Building on campus.

This breakthrough is an innovative development in the evolving area of proteomics – the large-scale study of proteins, their structure and functions. The DSU optics-method addresses the need in proteomics to be able to rapidly identify proteins and enzymes.

This development represents the first-ever transfer of intellectual property by DSU in the institution's history.

“This is reflective of not only the great strides we have made in our diverse research endeavors at this University, but of the purposeful direction that DSU's scientific agenda is moving toward,” said DSU President Harry L. Williams.

Through the DSU LIB-Tag Method, individual proteins and molecules can be detected and analyzed, and this can be instrumental in the diagnosis of medical conditions. The spectroscopy-based method is faster, more advanced and efficient than the biotechnology method currently used, said Dr. Nouredine Melikechi, DSU vice president of research and dean of the University's College of Mathematics, Natural Sciences and Technology.

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“This is a significant major step in our scientific and technological pursuits,” Dr. Melikechi said. “It is a strong indication that with a little help and support, DSU can play a major role in enhancing knowledge-based economic growth locally, regionally and nationally.”

Dr. Melikechi said he is particularly proud of the contribution of students in the research work of the Optics Program. “Our students are part of the future, and they have to be a part of designing it,” he said.



The research in the DSU Optics Program allows graduate students like Franz Delima to contribute work toward the science accomplishment like the one announced on Feb. 24.

Photon Machines has the exclusive worldwide license from DSU to develop the LIBS-Tag technology. The University is in the process of getting a patent finalized for this intellectual property.

“Photon Machines is excited to be licensing this innovative technology from DSU which both plays to one of our core technologies, and also promises to be an important innovation in biomedical diagnostics,” said Dr. Steve Buckley, co-founder and president of Photon Machine.

Dr. Buckley this new advancement has the potential to make a tremendous change in the lives of people through this advance method of analyzing individual proteins. “Protein in your blood has a lot of information about one’s health,” Dr. Buckley said. “This can be a game changer in health care.”

The Redmond, Washington-based Photon Machines specializes in the development of advanced, laser-based instrumentation. Its series of Analyte™ laser ablation systems are used worldwide in chemistry and geochemistry laboratories, and its new Insight™ LIBS systems allow rapid elemental analysis. The company specializes in the rapid integration of unique laser-based technologies and spectroscopies into new instruments, and software that facilitates method development and data reduction.

Dr. Melikechi, who founded the University’s first Applied Optics Center in 1997, credits then-Gov. Thomas R. Carper (now U.S. Senator from Delaware) for “planting the seed” with his support of that first optics facility.

Under Dr. Melikechi leadership, the DSU Optics Program has been awarded two separate \$5 million research grants – in 2006 from the National Science Foundation and in 2009 from the National Aeronautics and Space Administration, commonly known as NASA.

Several state legislators were in attendance for the announcement. “DSU is enhancing our youth, because they are getting a world-class education,” said state Rep. William Carson.

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