Dr. Gediminas Raciukaitis, Centre for Physical Sciences and Technology.

Bringing Leading Minds
TOGETHER IS CRUCIAL

HE IS KNOWN as '*the laser man*', as aside from his first year of study he has spent all of his life at the *University in Vilnius* and become inextricably linked with lasers, and whilst they have a laboratory there and also develop lasers today the main job of Dr. Gediminas Raciukaitis, Head of the *Department of Laser Technology at the Centre for Physical Sciences and Technology* in Vilnius, is to create applications for their use.

At the outset of his work the first lasers in Lithuania were run by semi-conductor physicists rather than by dedicated laser specialists, but that was before the laser industry itself came to the fore, which is when *Ekspla*, a laser company, invited Gediminas Raciukaitis to look into their lasers. He joined the company in 1995, which was when he started to develop laser technology for both small and big lasers, trying to advance them and introduce them to Lithuanian companies.

"When we started all this, initially my department was a laboratory and we were two people – me and one other," says Gediminas Raciukaitis. "Now we are about 70 people across six laboratories, with close to 20 Ph.D. students and about 20 people with doctorate degrees here too."

Engaged with the Ekspla laser company since 1995, Gediminas Raciukaitis currently holds the position of consultant on laser technologies. His activity related to the application of lasers in industry was moved to *the Institute of Physics* in 2004 and in February 2011 the laboratory was converted to the *Department of Laser Technologies*.

Starting out with their picosecond Nd: glass laser and a small series of mechanical mounts, Ekspla has significantly increased its production range and can now offers its customers solid-state lasers, laser systems and accessories for Research and Development (R&D) applications, optical parametric oscillators/generators, complete spectroscopy systems, laser power supply and cooling units, laser optoelectronics, industrial DPSS lasers and a custom designed laser system.

"Lithuanian companies today produce ultra-short pulse lasers and I manage to propagate some nice speeds – 300,000 km per second," says Gediminas Raciukaitis. "Ekspla is today a manufacturer of lasers, laser systems and laser components for R&D and industrial applications, and from its very beginning the company has aimed at the production of high performance advanced solutions. New ideas and the broad knowledge of its engineers and physicists, coupled with skilled and experienced staff, have made it possible to create an exclusive company."

On top of this Ekspla is also a member of the Lithuanian photonics cluster, as well as the Baltics photonics cluster. The close cooperation with academic and industry partners has enabled it to contribute to EU and international projects, such as *OPTIX* (an advanced system for detecting explosives in terrorist attack situations) and *APPOLO* (a consortium for establishing and coordinating connections between end-users and manufacturers).

Over at the University, starting out with simple laser microprocessing experiments in 2004 the activities of the Department of Laser Technologies have also evolved to now cover nanophotonics, laser science and applications including modeling of nanophotonic structures, development of optical components for lasers, new design of fibre and solid-state based lasers and their application in precise material processing.

"We offer services on the development and implementation of laser technologies for surface and