

PLATON – Processing Light: Advanced Technologies for Optical Nanostructures

The Austria-wide Photonics Cluster

Synopsis

PLATON (Processing Light – Advanced Technologies for Optical Nanostructures) photonics collaborative project started in March 2007 with six sub-projects and is designed to run for seven years. The Austria-wide collaborative project now links 15 partners who cooperate intensively. Main objective of the initial phase has firstly been to prepare for and exploit synergies secondly to foster excellence and thirdly to combine existing Austrian scientific as well as industrial expertise in the area of photonics and nano-technologies in order to increase visibility of Austrian activities in these fields. Results out of PLATON in terms of manufacturing and material science contribute to securing Austria as a strong player in manufacturing in a globalised supply chain.



Science

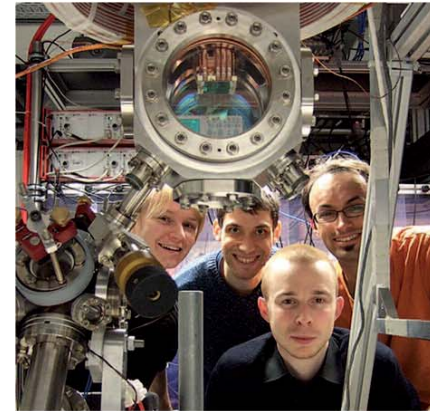
Austrian companies and research institutions involved in PLATON – the second youngest Cluster under the Austrian Nano Initiative – have been to the forefront internationally in the fields of environmental technology, solar cells, medical engineering, euro banknotes, lithography, terahertz technology, quantum cryptography and the atomic chips. During the developmental phase, PLATON succeeded in introducing the latest results from basic research and transferring them into the development of completely new types of measuring instruments and measuring processes. Here, they achieved the breakthrough for the laser-based determination of pH values. The simplicity of the radically new process for determining the pH value will open up a large number of entirely new applications.

Industry

Results PLATON project has delivered to date contribute to safeguarding Austria as a manufacturing base in a globalised value-creation chain: On the one hand, the research results help to avoid initially unexplained interfering phenomena for quality assurance. On the other hand, since completely new properties can be taken advantage of that guarantee ever-increasing data rates and speed for computers and networks. And it is also thanks to PLATON that completely new types of measuring instrument, tools and applications based on photonics will safeguard and enhance Austria as an industrial base. Without sound applied knowledge of quantum physics, the industrial production in numerous high-technology fields is in danger of collapsing in the years to come. The main added value for industry results from network based collaboration. The direct help and support made available immediately upon request for the Austrian companies could not have been realised without PLATON.

Impact

PLATON has already contributed to overcoming bottlenecks and technological-scientific challenges caused by continuous miniaturisation. To this effect, PLATON helped a small company to overcome significant hurdles in



the production of a prototype for a radically-new manufacturing process. The company subsequently became a globally-recognised technology leader and is now a European champion of essential manufacturing technology for the future. Several professors from PLATON have designed a continued education programme for 150 employees in Burgenland and Styria. The industrial partner Blue Chip is therefore in a better position to react to the niche market of high-value solar cells for solar power stations in order to succeed in a global price competition from their base in Austria. PLATON partners were coordinator of the I.S.T. research project SUPERSMILE – sponsored by the European Commission – and have participated in the integrated TERANOVA project (the same I.S.T. programme), as well as in several STREPs and Networks of Excellence. PLATON plans to develop at least six high-performance innovative devices during its seven-year duration.

Images:

Lab-hopping between world-class laboratories has become reality for the young scientists involved in PLATON.

INFOBOX

Duration of the Cluster project:
March 2007 to February 2014
www.platon-photonics.at

Project management:

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Project partners:

Research partners

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Austrian Academy of Sciences,
AIT Austrian Institute of Technology GmbH

Business partners

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IMS Nanofabrication AG,
Innovative Technologien Völp – IT-V,
kdg mediatech AG,
Blue Chip Energy GmbH,
Hueck Folien Gesellschaft m.b.H.,
Hubertus Goller GmbH,
VBC-GENOMICS Bioscience Research GmbH

"Basic research forms the foundation of all technological developments. Without fundamental knowledge, there would be no revolutionary new technologies and products."

Jörg Schmiedmayer