

Photonics: fundamental aspects and practical applications (Scientific session of the Physical Sciences Division of the Russian Academy of Sciences, 5 April 2017)

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A scientific session of the Physical Sciences Division of the Russian Academy of Sciences (RAS), entitled “Photonics: fundamental aspects and practical applications,” was held on 5 April 2017 in the Red Hall of the new building of the RAS Presidium.

The meeting proceedings are available at the RAS Physical Sciences Division website www.gpad.ac.ru and include the following presentations:

(1) *Opening address by I A Shcherbakov, Academician Secretary of the RAS Physical Sciences Division.*

(2) **Loshchenov V B** (Prokhorov Institute of General Physics, RAS, Moscow) “New diagnostics and treatment approaches to diseases of social impact using laser spectroscopy hardware”;

(3) **Kochiev D G** (Prokhorov Institute of General Physics, RAS, Moscow) “Photonics techniques in endo-surgery”;

(4) **Garnov S V** (Prokhorov Institute of General Physics, RAS, Moscow) “Generating superbroadband terahertz and gigahertz electromagnetic pulses using laser-induced superluminous sources”;

(5) **Kalachev A A** (Kazan Physical-Technical Institute, Kazan Scientific Center, RAS, Kazan) “Optical quantum memory as a key element of quantum communication technology”;

(6) **Shvartsburg A B, Pecherkin V Ya, Vasilyak L M, Vetchinin S P, Fortov V E** (Joint Institute for High Temperatures, RAS, Moscow) “Dielectric resonant magnetic dipoles: paradoxes, prospects, and first experiments”;

(7) **Shkurinov A P** (Lomonosov Moscow State University, Moscow) “Nearest application prospects for terahertz radiation systems”;

(8) **Vasiliev V P** (Scientific and Production Corporation “Precision Instrument-Making Systems”, Moscow) “Current state of high-accuracy laser ranging”;



The photo shows the cover page of the anniversary issue of the science and technology journal *Photonics* published to coincide with the scientific session of the Physical Sciences Division of the Russian Academy of Sciences “Photonics: Fundamental aspects and practical applications.” *Photonics* has been published for more than 10 years now by the independent science and technology-related publishing house Tekhnosila. Founded in 1996, Tekhnosila has successfully carried out many projects on producing education literature as well as science and technology and industry/trade-specific journals and books, with the fields covered widely ranging from materials sciences and electronics to biology and medicine (see the publisher’s site www.technosphera.ru). The journal *Photonics* highlights the latest research on and looks at the application prospects for laser and optical technology. Some of the session speakers are among *Photonics* authors.

(9) **Ivanov V V** (RAS Presidium) “Fundamental science as a basis for innovations.”

Papers based on talks 6 and 8 are presented in this issue.