

## Work on optical fibres in Russia

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The Sixth All-Russia Conference on Fibre Optics (ARCFO-2017) was held in Perm on 3–6 October 2017. The previous conferences were held in 2007, 2009, 2011, 2013 and 2015, also in Perm. Organised by the Fiber Optics Research Center (FORC), Russian Academy of Sciences, and the Perm Research and Production Instrument Company (PRPIC) and supported by the Perm National Research Polytechnic University (PNRPU) and Perm State University (PSU), ARCFO-2017 was a key scientific and technological event in the field of photonics, stimulating the development of fibre optics and adjacent areas of research in Russia.

The Conference Chair was Academician E.M. Dianov, scientific director of FORC; the Organising Committee was chaired by A.G. Andreev, director general of PRPIC; and the Program Committee was chaired by S.L. Semjonov, director of FORC.

The conference focused on recent advances in basic and applied research on fibre optics and in adjacent fields; information and experience exchange between workers of the leading Russian scientific, technological and educational institutions; and contacts in the fields of scientific research and innovative activities. The reports presented at the conference addressed the following issues: optical fibres, fibre-optic cables, optical fibre communication links, fibre-optic components and devices, fibre lasers and amplifiers, fibre-optic sensors and physical parameter measurement systems and microwave photonics. Attention was also paid to other priority issues in modern fibre optics and adjacent areas of research.

The reports presented at plenary sessions and two poster sessions demonstrated a general growth of the level of work performed in Russia in the field of fibre optics. The conference was a working platform for discussing current issues and research plans of scientists and engineers whose interests ranged from basic issues in fibre optics and applications to practical solutions in the form of novel types of optical fibres, fibre lasers and fibre-optic sensors, including high-speed and high-performance equipment for optical fibre communication systems. The creative atmosphere of the conference was helpful for accelerating the implementation of new ideas and approaches in the manufacture of new domestic fibre-optic products.

At the conference, researchers presented 1 plenary, 21 invited and 77 oral reports. There were also two poster sessions (70 posters). The largest number of reports were concerned with fibre lasers and amplifiers (28 presentations, including 7 invited reports). The next in number were the reports dealing with optical fibres and fibre-optic components (26 presentations, including 5 invited reports), optical fibre communication systems and information transfer (17 presentations, including 6 invited reports), fibre-optic sensors (12 presentations, including 2 invited reports) and microwave photonics (ten presentations, including one invited report). Fibre-optic cables received the least attention (five reports). The reason for this is that the key events for scientists and engineers working in this area are specialised cable conferences and symposia held on a regular basis in Russia.

The conference included a composite materials seminar, organised by PRPIC and Inversion-Sensor Ltd.; a ‘Nonlinear Photonics’ school for senior students and postgraduates, chaired by S.K. Turitsyn (director of the Aston Institute of Photonic Technologies) and a Photonics Industry manufacturer presentation section. In addition, there was a photonic products and equipment exhibition.

In the closing session, concerned with the results of the conference, Semjonov and Andreev emphasised the importance of holding a national conference for attracting Russian experts with the aim of exchanging results, upgrading skills and, more importantly, making new contacts between them. The conference should help to understand the general situation in the Russian fibre optics industry. In addition, they expressed confidence that the conference would continue to be held on a regular basis in the future, emphasising that it would be one of the key conditions for growth of this Russian industry. One resolution passed in the closing ARCFO-2017 session was to entrust the organisers of the conference with continuing work on the implementation of state support to the practical development of fibre optics and optical fibre communication links in Russia because, despite of Russian researchers’ achievements, there is an almost catastrophic lag behind the world’s leading powers in the field of implementation of fibre optics.

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