

Ultrafast fiber lasers for bio-medical and industrial applications

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Talk abstract: Ultrafast fiber lasers are now becoming one of the driving forces in bringing down the cost of manufacturing IT systems and components. In this talk we will review key features of picosecond and femtosecond fiber lasers such as power and energy scalability, simplicity, modularity and efficiency of ultrafast MOPA systems. We will discuss recent advances in the development of large mode area fibers and photonic crystal fibers. We will also describe key areas of the application of ultrafast fiber-based systems, paying particular attention to micromachining. Finally we will review recent advances in the development and applications of one of the brightest lasers – supercontinuum fiber lasers – a source capable of generating diffraction limited white light and offering a range of applications as broad as its spectrum.

Speaker biography: Anatoly Grudinin has started his work in the area of fiber optics in 1980 when he joined Physical Lebedev's Institute Russian Academy of Science (FIAN) after graduation from Moscow State Technical University. He was one of first researchers who studied nonlinear properties of silica fibers and pioneered discovery of Raman solitons in single mode optical fibers. In 1992 Anatoly has joined Optoelectronics Research Centre at University of Southampton where his main areas of interest were soliton fiber lasers, high power fiber laser and amplifiers. Over his scientific carrier Anatoly published over 200 papers and gave numerous invited talks at major international conferences (CLEO, OFC, ECOC, Photonics West). In 2003 Anatoly left his professor's chair at the ORC and founded Fianium, a fiber laser company focused on development and volume manufacturing of ultrafast fiber lasers for bio-medical and industrial applications.