

Professor Sergei Turitsyn



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Profile

I graduated from the Department of Physics of the Novosibirsk University, Russia in 1982 and received my Ph.D. degree in Theoretical and Mathematical Physics from the Institute of Nuclear Physics, Novosibirsk, Russia in 1986. From 1992 to 1998 I worked in the Institute for Theoretical Physics I, Heinrich-Heine University Duesseldorf, Germany; first as a Humboldt Fellow and then within the collaborative projects with Deutsche Telekom. I joined the Photonics Research Group in the School of Engineering and Applied Science, Aston University in 1998. During last two decades I have been working on various problems of nonlinear science, including soliton theory, self-focusing of light beams, discrete nonlinear systems, and nonlinear fibre optics. My recent research has been shifted towards the high-speed optical communications, nonlinear photonic devices, Raman-based technologies, and ultra-long fibre lasers. Since 2005, I hold the Royal Society Wolfson Research Merit Award.

Qualifications & Education

Joint MSc/BSc in Physics, Novosibirsk University, Russia 1982

PhD in Theoretical and Mathematical Physics, Institute of Nuclear Physics, Novosibirsk, Russia 1986

Employment

2005 – date: Professor in Photonics, Electronic Engineering, School of Engineering and Applied Science, Aston University.

1998 – 2005: Reader, Electronic Engineering, School of Engineering and Applied Science, Aston University.

Teaching activity

EE401A: Information Theory and Coding and Teletraffic Theory
EE402A: Optical Communications Systems

Research interests

Nonlinear science:

Dynamics of nonlinear waves and solitons, stability of nonlinear waves, propagation of nonlinear waves in optical fibres; theory of the pulse generation and amplification in active media; dynamics of the coherent structures in lattices including waveguide and fibre arrays; energy localization in lattices; supercontinuum generation in fibres.

Fibre optic and optical communications:

High-bit-rate optical communication systems, dispersion-management in fibre transmission lines; soliton-based transmission and optical signal processing lines, design and modelling of advanced components and devices for high-bit-rate optical communication systems, statistics of nonlinear optical data transmission, information theory of nonlinear fibre channels, all-optical regeneration; fibre laser technologies, including ultra-long fibre lasers, modelling and design of fibre lasers and converters; Raman-based amplification in high-speed fibre links.

Recent research funding

Principal Investigator in 33 awarded research projects from national and international organizations and industry.

PhD Supervision

Supervision of eight completed PhD's;

Topics for potential PhD:

Fibre lasers

Nonlinear photonic devices

Advanced techniques in high-speed optical communications

Membership of Professional Bodies

Member of the Scientific Advisory Committees for 16 international conferences in the fields of Telecommunications, Nonlinear Science and Optics.