

Dr. Oleg MUKHANOV, is Chief Technology Officer and co-founder of Seeqc, Inc., a quantum computing spinout of Hypres. Prior to that he was CTO and President, Quantum Information Processing at Hypres. He received the Ph.D. in physics (1987) from Moscow State University and the M.S. in electrical engineering (1983) from Moscow Engineering Physics Institute (with honors). Dr. Mukhanov has more than 30 years of experience in superconducting electronics. From 1991 to 2019, he was with Hypres, Inc. – an IBM spinoff focused on the development of high-performance superconducting electronics. He joined Hypres to initiate the development of Rapid Single Flux Quantum (RSFQ) superconductor circuit technology, which he co-invented in 1985. Prior to Hypres he was a staff scientist in Moscow State University developing the RSFQ technology basis. Over the years at Hypres, Dr. Mukhanov went from circuit designer to chief technical officer, initiated and led many projects on high-performance digital and mixed signal RSFQ circuits including data processors and memory, radio frequency signal reception, signal and time digital processing, cryogenic interfaces for a variety of applications. This resulted in the first commercial use of superconducting digital electronics – RSFQ-based Digital-RF receivers. He was the designer of a number of the world’s fastest digital circuits. He co-invented Digital-RF architecture and led the development of the world’s first cryocooled Digital-RF receiver system. He also co-invented and led the development of new generation of energy-efficient single flux quantum technology and superconducting ferromagnetic and superconducting spintronic random access memories for energy efficient computing systems. Dr. Mukhanov authored and co-authored over 200 scientific papers, book chapters and over 40 patents. He is a member of advisory committees of international conferences and institutions on superconducting electronics, was chair and member of organizing and program committees of many national and international superconductor electronics conferences. In 2005-2007, Dr. Mukhanov was a president of the US Committee on Superconducting Electronics. He was a long-standing editor of IEEE Transactions of Applied Superconductivity (2002-2019) and received an IEEE outstanding service recognition as an editor of special issues of this journal. From 2020, he is an editor of IEEE Transactions on Quantum Engineering. Dr. Mukhanov is a Fellow of IEEE and member of American Physical Society. He is the recipient of The IEEE Award for Continuing and Significant Contributions in the Field of Small Scale Applied Superconductivity (2015).