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Institute of Ultra High Frequency Semiconductor
Electronics of Russian Academy of Sciences

On the occasion of the 70-th anniversary of Victor I. Ryzhii

NANOHETEROSTRUCTURES IN TERAHERTZ ELECTRONICS AND OPTOELECTRONICS

Edited by a Corresponding
member of the Russian Academy of Sciences
Victor I. Ryzhii

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Nanoheterostructures in terahertz electronics and optoelectronics

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This paper collection contains of the selected works published in scientific journals by V.I. Ryzhii and his co-authors primarily in 1997–2016. These works deal mainly with the following device application-oriented topics: Quantum-well infrared photodetectors; Quantum dot infrared photodetectors, Physical phenomena in Graphene heterostructures; and Devices based on Graphene heterostructures.

A significant portion of the papers, in particular, on the magnetotransport in two-dimensional electron gas in heterostructures (1968–2001), absolute negative conductivity in the heterostructures irradiated by microwaves (1969–2005), theory of nonequilibrium (ballistic) electron transport in heterostructure devices and their computer modeling (1979–2016), as well as plasmonic and nano-electromechanical effects and their application for detectors of terahertz radiation (1973–2016) have not been included in this collection, although, some of the omitted papers deal with the most known and “resonant” aspects of the scientific activity by V. I. Ryzhii.

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