

## OUTSTANDING DISCOVERY OF THE XX-th CENTURY - LASERS: PERSPECTIVES OF USING FOR THE BIG CITIES NEEDS

A. M. PROHOROV

*Russian Academy of Sciences, Institute of General Physics  
38 Vavilov Str., Moscow 117942, Russian Federation*

S. RADAUTSAN

*Academy of Sciences of Moldova, Institute of Applied Physics  
5 Academy Str., Kishinev MD 2028, Republic of Moldova*

A. SYRBU, V. IAKOVLEV

*Technical University of Moldova  
168 Stefan cel Mare Av., Kishinev MD 2012  
Republic of Moldova*

### Abstract

The unique properties of lasers, together with the phenomena they produce, have led to the explosive growth in laser use in the brief period since its invention in 1954 [1,2]. Now it is difficult to imagine a big city without lasers and laser systems used for various aims.

The review of the main achievements on growth, fabrication, characterization and application of the multinary solid solutions for laser diodes in Moldova is presented [3,4].

A new approach of low temperature selective melt-etching and regrowth was successfully used to form high performance AlGaAs-based buried heterostructure lasers for telecommunications and medical applications [5,6].

A study of laser facets at high optical power density levels resulted in elaboration of a new characterization technique for laser diodes [7].

A new facet coating system based on ZnSe was applied to InGaAsP high power laser diodes. These lasers emitted 2.85 W optical power in continuous operation that is the highest value in this material system [8].

The results of medical applications of laser-diodes-based therapeutic apparatus in Moldovan and Romanian medical institutions are reported as well.