**"Gyroskopiya i Navigatsiya" №3, 2008**

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| The paper is devoted to the development and manufacturing of "silicon-glass" micromechanical sensors of encapsulated type with digital output processing. The key technological processes allowing production of micromechanical encapsulated sensors with vacuum inside are considered and the features of their design are described. The methods for maintaining high reliability of encapsulated micromechanical gyroscopes with inner getter structure are discussed. ASIC designs for control and processing of micromechanical sensor outputs allow their accuracy, which is part of modern integrated systems, to be considerably improved. Also considered are various assemblies and packaging of the ASIC and micromechanical sensor as a single product. |  |

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| Rotation sensors exploiting the Sagnac effect have many advantages, which give rise to a broad range of applications in which such sensors are irreplaceable. By vastly increasing the size, and consequently scale factor and sensitivity of ring lasers this group has achieved relative Earth rotation measurement resolution of 2 10-8. Today the real-time measurement delivered by large ring lasers provides data complementary to VLBI observations [7]. The application of optical sensors in seismology is an entirely new field, which is constantly evolving with the increased demand for quality data and analysis. Both ring lasers and fiber optic gyros can be employed for various seismological measurements, providing rotational information, which cannot be obtained via traditional seismometers. This paper presents an overview of current large ring laser development status, as well as insight into new research areas where both ring lasers and fiber optic gyros can help to obtain information of great value. |  |

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