



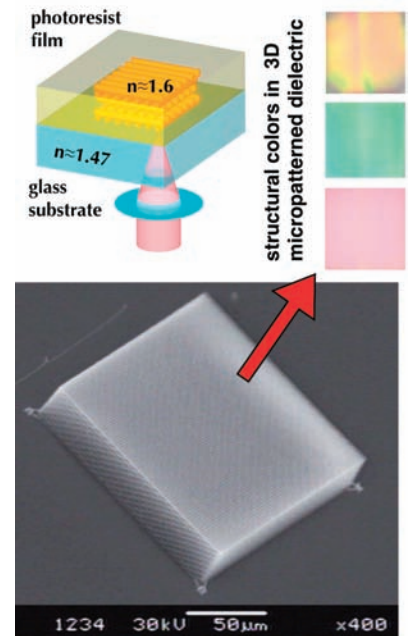
# Optical tailoring of novel optical materials and systems

## 特任准教授 ミゼイクスピガンタス (応用光学) (Vyantas Mizeikis)

1965年生まれ、1997年リトアニア ウィリニウス大学大学院博士課程修了、1997-2000年ウィリニウス大学物質応用科学研究所研究員、2000-2003年徳島大学SVBL研究員、2003-2007年北海道大学電子科学研究所JST-CREST研究員、2007-2009年北海道大学電子科学研究所研究員、2009年静岡大学若手グローバル研究リーダー育成拠点(電子工学研究所)特任准教授(テニェア・トラック)。

### 研究概要

My research is aimed at creation of very small objects having size less than one micrometer by exposing various materials to a laser beam. This approach is called laser microfabrication technique, and enables fast and easy preparation of thousands and millions of such microscopic objects, arranged into random or periodic patterns. These patterns have optical properties (direction-dependent reflectivity and transmission, bright colors) determined by the size, shape, and arrangement of the microscopic objects. Tailoring of these optical properties via optical micro- and nano-structuring is highly sought in many areas of modern science and technology, for example in creation of more efficient light sources (lasers, light-emitting diodes) and receivers (photodiodes, solar elements, etc.).



若手重点研究者

### メッセージ

Fabrication of new optical materials is extremely important for the advancement of photonics in the 21st century. This is a multidisciplinary area blending quantum electronics, optics, microscopy, and materials science. While doing my research and building my research laboratory, I am also trying to expand international and cross-disciplinary collaborations.

### 【主な研究業績】

Membership in SPIE and JSAP scientific societies  
Over 70 scientific papers in peer-reviewed journals (including Physical Review Letters and Advanced Materials)

1. L. Rosa, K. Sun, V. Mizeikis, S. Bauerdick, L. Peto, S. Juodkazyte, S. Juodkazyte, "3D tailored gold nanoparticles for light field enhancement and harvesting over visible-IR spectral range", J. Phys. Chem. C 115, 5251-5256, 2011.

2. V. Mizeikis, S. Juodkazyte, R. Tarozaitis, J. Juodkazyte, K. Juodkazyte, H. Misawa, "Fabrication and properties of metal-dielectric photonic crystal structures for infrared spectral region", Optics Express, Vol. 15, Issue 13, pp. 8454-8464, 2007.

3. V. Mizeikis, S. Matsuo, S. Juodkazyte, and H. Misawa, "Femtosecond laser microfabrication of photonic crystals," in 3D Laser Microfabrication, H. Misawa and S. Juodkazyte, Eds., Ch. 10, pp. 239-286, Wiley-VCH Verlag, 2006.