

## **Plasmon resonance induced photoconductivity in the yttria stabilized zirconia films with embedded Au nanoclusters**

© *D.O. Filatov, I.N. Antonov, D.Yu. Sinutkin, D.A. Liskin, A.P. Gorshkov, O.N. Gorshkov, V.E. Kotomina, M.E. Shenina, S.V. Tikhov, I.S. Korotaeva*

Lobachevskii State University of Nizhny Novgorod,  
603950 Nizhny Novgorod, Russia

E-mail: dmitry\_filatov@inbox.ru

We report on the investigation of the photoconductivity (PC) in the yttria stabilized zirconia (YSZ) films with embedded Au nanoclusters (NCs). A peak in the PC spectrum corresponding to the plasmon optical absorption resonance in the Au NCs was observed. The temperature dependence of PC near 300 K obeyed Mott law. In this case, the PC was attributed to the heating of the YSZ matrix due to the plasmon optical absorption in the Au NCs (bolometric effect). Near 77 K, the PC did not depend on temperature and was attributed to plasmon-assisted electron transport between the NCs via the vacancy  $\alpha$ -band in YSZ.

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