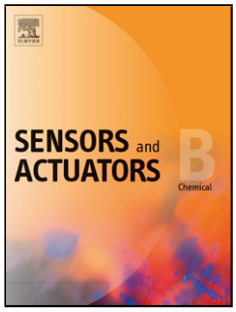

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Sezawa wave acoustic humidity sensor based on graphene oxide sensitive film with enhanced sensitivity

I.E. Kuznetsova[1*], V.I. Anisimkin[1], V.V. Kolesov[1], V.V. Kashin[1], V.A. Osipenko[2], S.P. Gubin[3], S.V. Tkachev[3], E. Verona[1,4], S.Sun[5], A.S. Kuznetsova[1]

[1]Kotelnikov Institute of Radio Engineering and Electronics of RAS, Moscow, 125009, Russia.
[2]OAO "NII Elpa", Zelenograd, Moscow, 124460 Russia
[3]Kurnakov Institute of General and Inorganic Chemistry of RAS, Moscow, 119991, Russia
[4]Institute for Photonics and Nanotechnologies, IFN-CNR, Via Cineto Romano 42, 00156 Rome, Italy
[5]Management School, University of Shanghai for Science and Technology, 516 Jungong Road, Shanghai 200093, PR China

Contact authors: Iren E. Kuznetsova, Mokhovaya 11, bld.7, Kotelnikov Institute of Radio Engineering and Electronics of RAS, Moscow, 125009, Russia;

E-mail: kuziren@yandex.ru

Highlights.

- Sezawa wave in "ZnO film-Si" is more sensitive towards electric conductivity variations in GO film produced by adsorbed water molecules than Rayleigh wave.
- The humidity sensor with enhanced sensitivity (91 kHz/%) and linear response vs relative humidity in the range 20-98%RH was produced.
- Developed sensor is most sensitive to humidity in comparison with other acoustic sensors using GO film.

Abstract: The measurement of humidity is very important for air control in ambient, industry, cars, houses, closed apartments, museums, atomic power stations, etc. In the present work the theoretical analysis of the surface acoustic wave propagation in "graphen oxide (GO) film/ZnO film/Si substrate" layered structure has been performed. The change of GO film conductivity due to humidity