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Authors: I.A. Borodina, B.D. Zaitsev, G.L. Burygin, O.I. Guliy

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Sensor based on the slot acoustic wave for the non-contact analysis of the bacterial cells - antibody binding in the conducting suspensions

I.A. Borodina ¹, B.D. Zaitsev ¹, G.L. Burygin ^{2,3}, O.I. Guliy ^{2,3}

¹Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Saratov Branch, Saratov, 410019, Russia

²Institute of Biochemistry and Physiology of Plants and Microorganisms of RAS,

Saratov, 410049, Russia

³Saratov State Vavilov Agrarian University, Saratov 410012, Russia

e-mail: borodinaia@yandex.ru

Contact author: Irina A. Borodina, Zelyonaya str., 38, Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Saratov Branch, Saratov, 410019, Russia

e-mail: borodinaia@yandex.ru

Fax: +7-8452-27-24-01

Highlights

- The possibilities of using the biological sensor based on the acoustic slot mode for the contactless analysis of the bacterial cells-antibody binding in the conducting suspensions were investigated.
- In this sensor the suspension container with the bottom made of the lithium niobate plate, was located above the delay line with the given gap. The excitation of the slot mode in such a structure led to the appearance of the sharp resonant peaks on the frequency dependence of the insertion loss of the sensor.
- It was shown that the specific biological interaction "bacterial cells-antibodies" changes the values of the depth and frequency of these peaks. In the case of non-specific interaction "bacterial cells-antibodies" the changes of the parameters of these peaks were not observed.

Abstract:

The possibilities of using the acoustic sensor based on the slot mode in the delay line with a shear horizontal acoustic wave of zero order for the contactless analysis of the bacterial cells-

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