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Application of hydroxyapatite thin film as a biosensor¹ HIROAKI NISHIKAWA, B.O.S.T., Kinki Univ., CREST-JST, Wakayama Pref. C.R.E.A.T.E. of the JST, DAICHI OKUMURA, B.O.S.T., Kinki Univ., CREST-JST, MASANOBU KUSUNOKI, SHIGEKI HONTSU, B.O.S.T., Kinki Univ., CREST-JST, Wakayama Pref. C.R.E.A.T.E. of the JST — Hydroxyapatite (HAp) surface has an excellent ability of adsorption for functional biomolecules such as protein, DNA and so on. The surface electronic state of the HAp is affected by the adsorption of biomolecules. Thus, the electric properties of the surface such as resistivity and capacitance will vary. Because the property is effective for a receptor and transducer of biomolecule, we have investigated the application of the HAp as a suitable material for a biosensor. In this study, thin film of the sodium-doped HAp (Na-HAp) is prepared. The sodium doping is to decrease the resistivity of the HAp because the stoichiometric HAp is a good insulator. When bovine serum albumin of 1 ml was dropped to a Na-HAp thin film in a 100 ml pure water, the sample shows the drastic change of the AC resistance (at 120 kHz). This result shows that the Na-HAp will be one of the most effective materials for the biosensor applications.

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