

**S1-P.39****Detection in the Contacts with HTSC - InSb: Numerical Modeling of the Contact Area Role**

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Diode detectors (DD) are widely used in electronic information and communication systems. The numerical modeling of the electrical properties in the contacts of the high temperature superconductor (HTSC) with semiconductor indium antimonite (InSb) had been made. There were analyzed the possibilities to create DD based on these contacts and working at liquid nitrogen temperature 77.4 K. The influence of the contact area on the DD parameters was analyzed.

Also the numerical modeling of the electrical potential distribution and current passing in the contacts of normal metal or superconductor with semiconductor alloy bismuth-antimony (Bi-Sb) was made. There were analyzed possibilities to create DD based on these contacts and working at liquid helium temperature 4.2 K.

The comparison with existent literature data shows the proposed DD can be 10÷100 times better. Therefore these DD are perspective for cryogenic electronics and there is an actual problem to elaborate them.