SCHOTTKY JUNCTIONS WITH SOME CONDUCTING POLYMERS

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ABSTRACT

The aim of project work is to study Schottky junctions with some conducting polymers.

The properties of both metal /PPy(ClO_4^-) and metal/PNMP(ClO_4^-) contact were studied by means of I-V characteristics. Five devices were taken to study Schottky junction. Pt/PPy(ClO_4^-)/Hg, Au/PNMP(ClO_4^-)/Ag and Au/PNMP(ClO_4^-)/In junctions were not rectifying. They were ohmic contact. Pt/PNMP(ClO_4^-)/Hg was somewhat good. Au/PNMP(ClO_4^-)/Hg structure was also rectifying and some results showed non ohmic symmetric behavior. Here, readings were taken by varying current densities, film thicknesses and number of days after preparation. Most of the results were shown strictly exponential for forward bias. The breakdown voltage was low for small value of film thickness and was high with the age of the film.

I-V characteristic was taken for Au/PNMP(ClO_4^-)/Hg structure, keeping mercury directly on the sample. I-V behavior was checked for the junction Au/PNMP(ClO_4^-)/Hg under dark condition and under illumination. Those junctions were shown rectifying behavior too. They were more exponential under illumination than dark condition and the breakdown voltage was low under illumination for each condition.