ELECTROPHORETIC DEPOSITION OF METAL NANOPARTICLES ON GAN EPITAXIAL LAYERS

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Abstract

Electrophoretic deposition of Pt and Pd nanoparticles (NPs) from the reverse micellar colloidal solutions is used to fabricate extremely sensitive Schottky-based hydrogen sensor elements. High quality Schottky diodes are prepared by the deposition of colloidal graphite. The metal interlayer of Pt or Pd NPs serves to dissociate hydrogen molecules and to alter the Schottky barrier height (SBH) in the presence of hydrogen. Changes of SBH are detected by electrical measurements.

Keywords: electrophoretic deposition, metal nanoparticles, Schottky barrier, hydrogen sensor

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