

CVD SYNTHESIS OF BN AND BCN COATINGS USING TRIMETHYLBORATE PRECURSOR

STEPAN LINNIK, ALEXANDER GAYDAYCHUK AND VITALY OHOTNIKOV

*Tomsk Polytechnic University, Russia
stepan_lin@mail.ru*

We have studied the formation conditions of boronnitride (c-BN and a-BN) and B-C-N thin films deposited in abnormal glow discharge plasma using trimethylborate $B(OCH_3)_3$ as a main boron source precursor. Effect of gaseous atmosphere composition and the discharge current-voltage characteristics on the phase composition of deposited coatings was investigated. The composition and structure of the coatings were investigated using Raman spectroscopy, X-ray diffractometry and SEM. Micro- and nanohardness of the films were also measured. Optical emission spectroscopy (OES) has been used to investigate the generation of active species in plasma during the deposition process.

Keywords: *CVD synthesis, Boronnitride, Boron carbonitride, Glow discharge plasma.*