II. 5 *" Processing of Silicon Carbide and Sapphire Surfaces"*

Silicon carbide (SiC) displays characteristics that are overall superior to both Si and GaAs. Specifically, wider bandgap and higher thermal conductivity as well as higher saturated electron drift velocity and higher breakdown field make it particularly suitable for high temperature, high power device applications. Still, SiC-based MOS device technology is not fully commercialized yet due to the high density of traps at the SiC/SiOx interface and low mobility of electrons in the channel. The sapphire (single crystal Al2O3) on the other hand is a substrate of growing importance in semiconductor device manufacturing particularly in Silicon-On-Sapphire (SOS) technology geared specifically toward RF applications.

The common denominator for SiC and sapphire is that besides applications mentioned above both are used as substrates for wurzite-type semiconductors, such as for instance GaN, in the range of photonic and electronic device applications. Considering their role as substrates on one hand and problems with SiC/SiOx interface control on the other, the issue of surface processing is of great interest in the case of both these materials. The goal of this presentation is to discuss various aspects of SiC and sapphire surface cleaning and engineering. The discussion is supported by original experimental results obtained by means of AFM, XPS, wetting angle characterization and electrical characterization of test devices formed on commercial SiC and sapphire substrates.

** Seminaria wygłaszane będą w języku polskim z wykorzystanie ilustracji w języku angielskim.*