

Abstract Submitted
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Diamond Nanoelectronics¹ IGOR ALTFEDER, Air Force Research Laboratory, JACQUELINE KRIM, North Carolina State University, ANDREY VOEVODIN, Air Force Research Laboratory — Thin films of ultra-nanocrystalline diamond (UNCD) represent an extremely promising nanoelectronic material. The electronic devices based on UNCD can operate at temperatures exceeding by an order of magnitude the working temperature of silicon-based devices. This talk will describe the recent STM/AFM study of CVD-grown UNCD films. The most important advances and challenges of UNCD-electronics, which will be discussed, are (a) the possibility of controlled doping of these films, (b) the influence of doping on chemical structure of UNCD surfaces and interfaces, and (c) exploring extremely low surface adhesion/friction of UNCD for design of MEMS.

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