

Master/Bachelor Thesis – Institute of Micro and Nanomaterials - Diamond Group

Nanocrystalline Diamond (NCD) is used as a coating material to improve the tribology, durability and stiffness of machine parts, drilling tools etc.

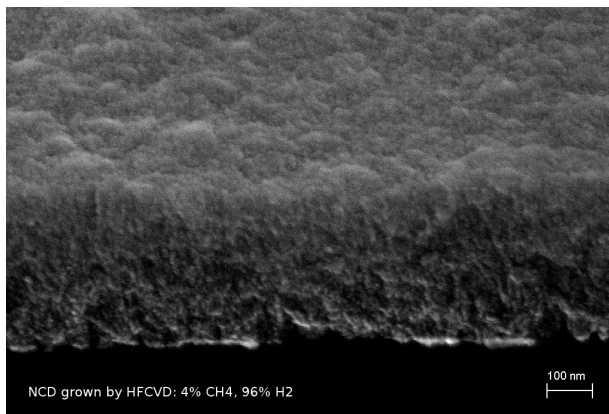


Fig. 1) Nanocrystalline Diamond Film

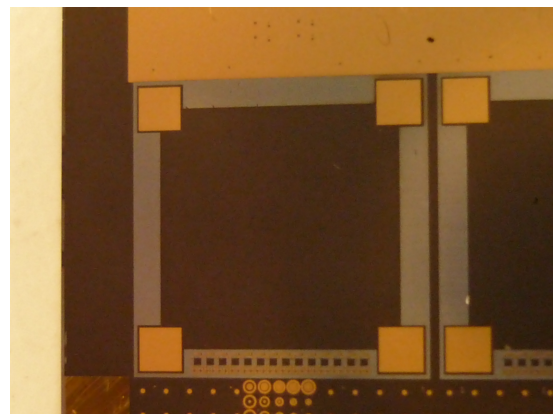


Fig. 2) Structured NCD with Au Contacts on SiO₂ for electrical testing

The observation of n-type conductivity in (ultra-) nanocrystalline diamonds (UNCD) makes it again interesting for integrated microelectromechanical systems (MEMS). Therefore the structuring of diamond that was grown by hot filament chemical vapour deposition (HFCVD) is a crucial part.

In this thesis, processes to structure grown NCD thin films by plasma etching have to be optimized and characterized and also the possibility to grow (ultra-)nanocrystalline diamond selectively can be investigated.

If you are interested and/or have further questions, dont hesitate to contact me

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