Silicon Carbide (SiC) is a wide band semiconductor used both in electronics and in mechanical application of hard coatings. Ablation by the Pulsed Plasma Deposition (PPD) method of SiC targets is an efficient process since electrons interact strongly with the wide band target contrary to Pulsed Laser Deposition (PLD) which is limited by the energy (wavelength) of the laser pulse. The especially designed substrate heater allows achieving temperatures as high as 1000℃ enabling to ge t hard and adherent films. Faster deposition rates may be obtained by using more than one PPD gun. This is possible since the PPD gun is quite simple and with a limited cost. The PPD process allows achieving ultra hard coating by complementing thick hard coatings obtained by ordinary methods (i.e. thermal spray) with a thin film (100-1000nm) of ultra hard material (SiC).

Typical properties are the following:

- **Flat and adherent 100-1000 nm thick films (see Fig. 1).**
- **Typical hardness of one half of the bulk SiC hardness.**

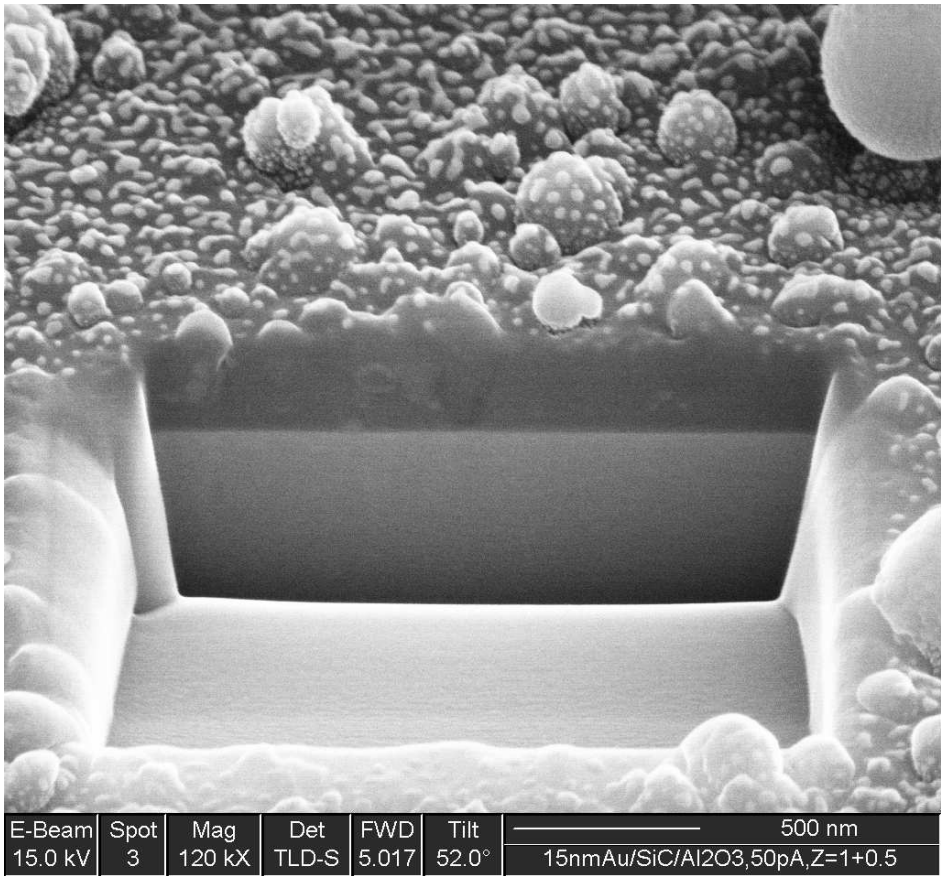

Fig. 1 SEM image of the SiC thin film used for the AFM indentation measurement.