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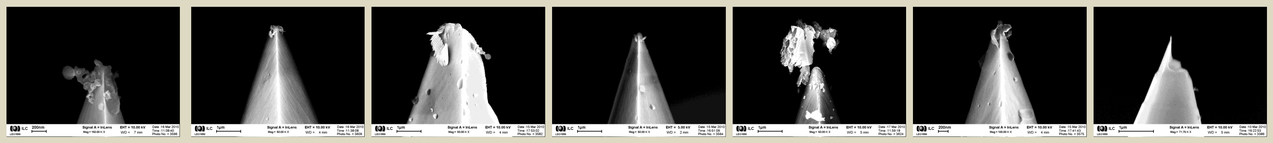
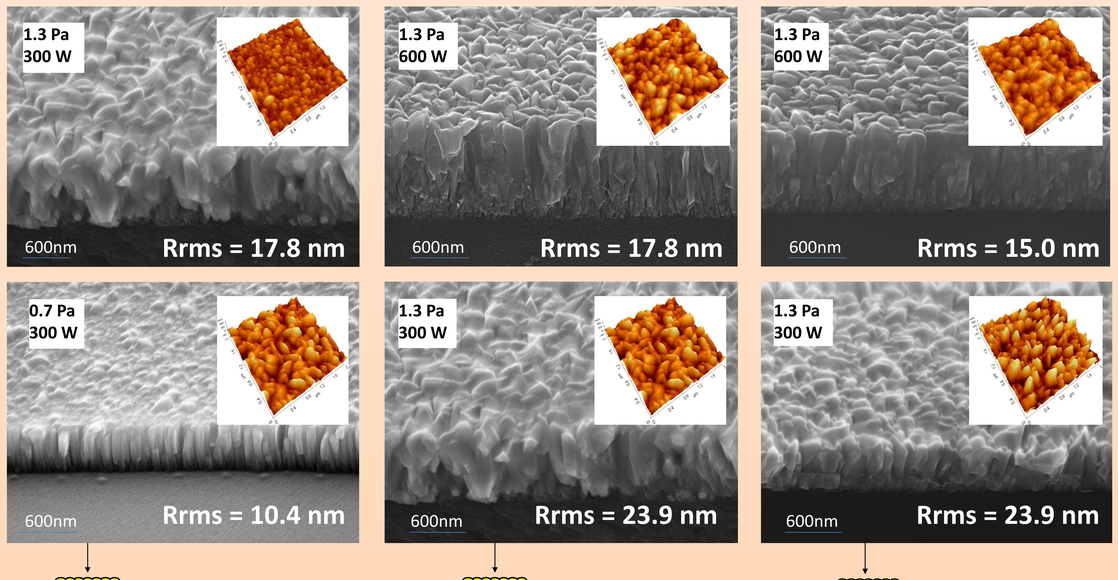


(Soňa Flickyngerová)

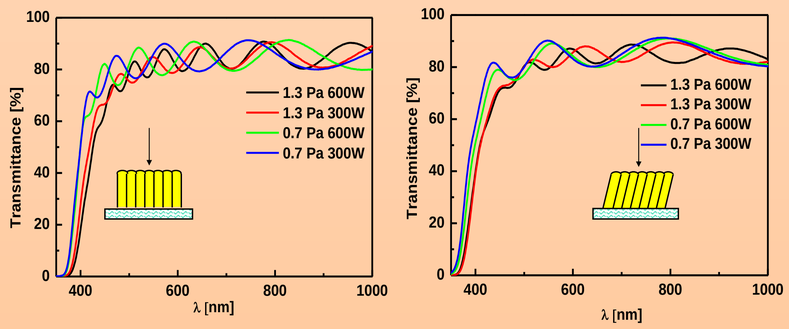
Oblique-angle GZO films deposited by RF sputtering

GZO thin films were prepared at room temperature on Corning glass substrates by both normal and oblique-angle RF diode sputtering from ZnO:Ga (2%) ceramic target in Ar gas. Mean thicknesses of all GZO films were about 0.75 µm. Four ZnO:Ga films were prepared by using two different Ar working pressure (1.3 Pa and 0.7 Pa) and two RF power (600 W and 300 W).

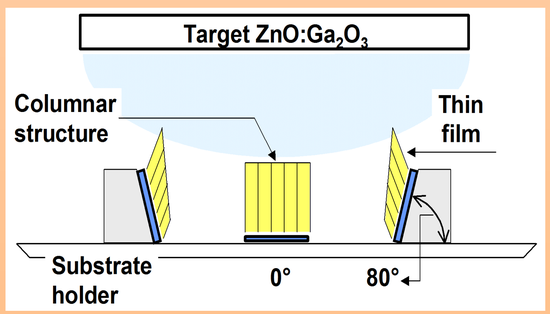


Comparison of SEM and AFM surface morphology of GZO thin films deposited by normal (S_n) courses at diferent (1.3 Pa, 0.7 Pa) Ar pressure.

Comparison of SEM and AFM surface morphology of GZO thin films deposited by normal (S_n) and oblique (S_o) courses at different RF power (600 W, 300 W).



Spectrum of the specular transmittance in the range of 400 - 1000 nm of the normal (S_n) and obliquely (S_o) deposited films at different pressure and RF power.



Oblique-angle sputtered GZO films by RF power of 600 W at room substrate temperature in Ar pressure 1.3 Pa showed the strong crystalline (002) texture, the lowest electrical resistivity 3.4 x 10^{-3} Ωcm, the highest electron mobility 10 cm^2Vs^{-1}, high electron concentration 1.8 x 10^{20} cm^3 and good optical transparency 88 %.

This work was supported by the MSMT CZ Grant project 1M06031 and partially by the SK VEGA projects 1/0220/09 and 1/0787/09

(Jaroslava Škriniarová)

Scanning the tip characterization grating with three different tips

Type of tips:

- **high resolution tip AR5-NCHR**
- **new ACTA tip**
- **old blunt ACTA tip**

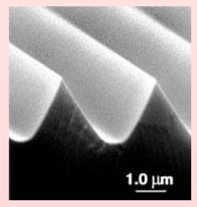
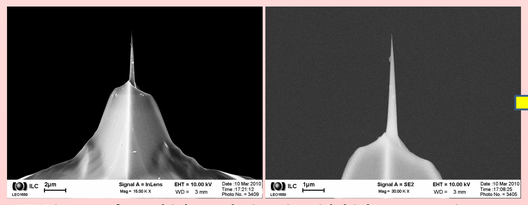
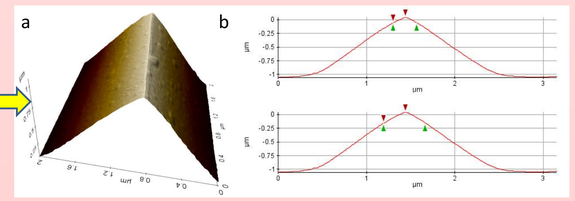


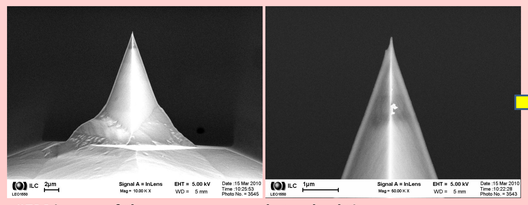
Fig. 4. SEM image of test grating - teoretical width of the step 100 nm below the top - 140 nm.



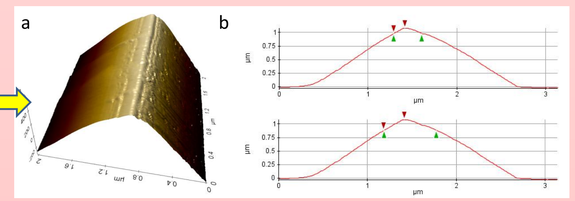
SEM image of new high resolution tip with high aspect ratio



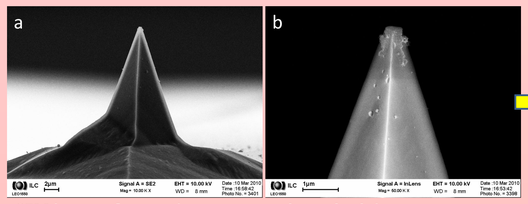
AFM image and line profiles of triangular step (2 x 2 µm)



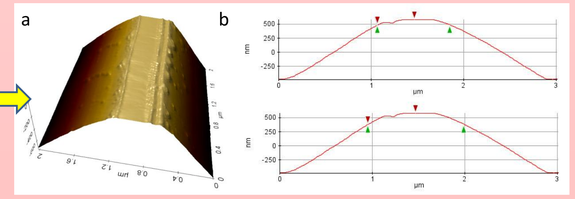
SEM image of the once measured standard tip



AFM image and line profiles of triangular step (2 x 2 µm)

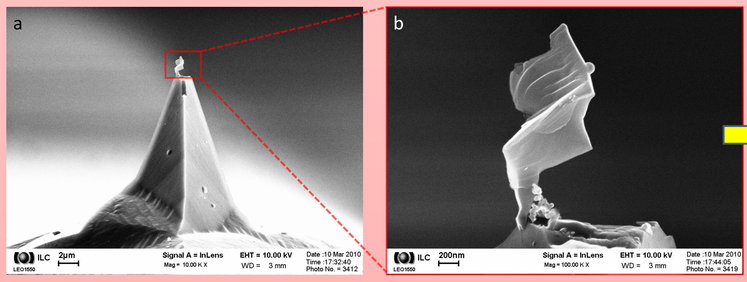


SEM image of many times measured standard tip

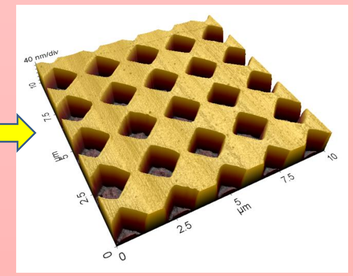


AFM image and line profiles of triangular step (2 x 2 µm)

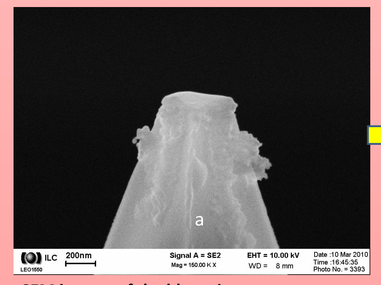
Scanning the periodical structure with blunt and strangely shaped tip



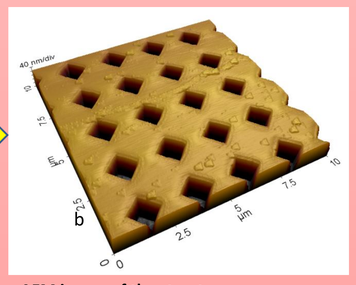
SEM images of the "damaged" tip.



AFM image of the structure.



SEM images of the blunt tip.



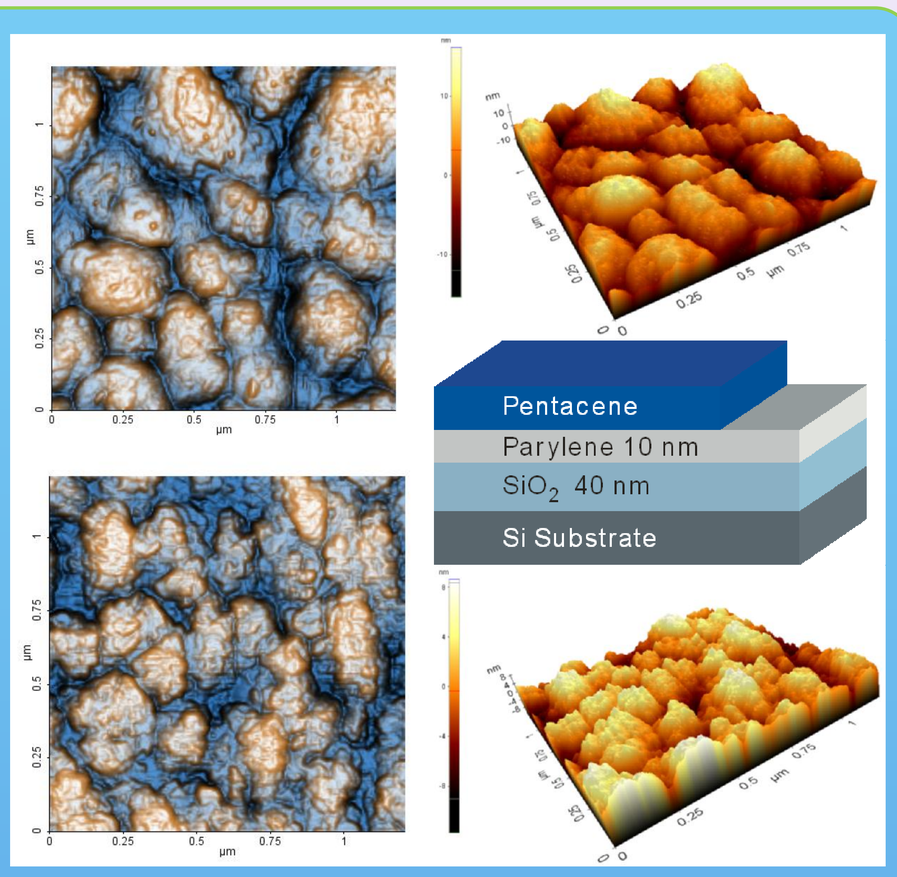
AFM image of the structure.

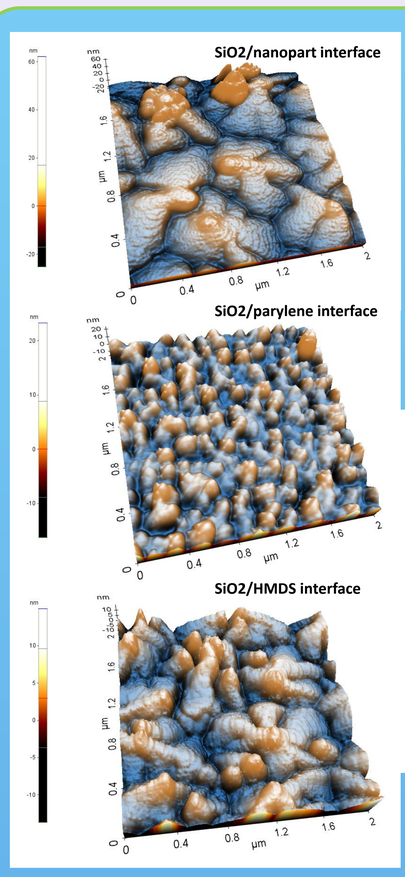
This work was done in Center of Excellence CENAMOST (Slovak Research and development Agency Contract No. VVCE-0049-07) with support of grant VEGA 01/0689/09.

(Jaroslav Kováč)

Characterization of materials for organic-based optoelectronic devices

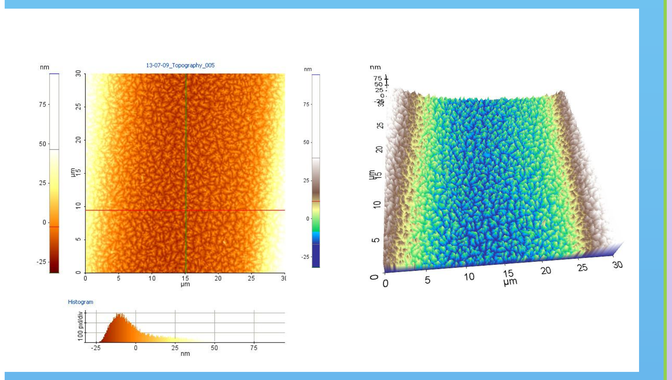
AFM topography of pentacene layer in non-contact mode confirmed the preferable pentacene grain formation on parylene surface in dependence of layer thickness. The large grains formation confirmed 3D pentacene growth with grain high in the range of 20 nm. The thin 10 nm pentacene layers on 10 nm parylene layers show considerably reduced size and hight of the grains. These results suggest that the grain size and surface corrugation is increasing with increasing pentacene layer thickness.





Influence of buffer layer on the parylene top layers resulted to very different structure of the molecular structure. Parylene is perspective material as a passivation material for its physical and insulating properties.

Topography inside a channel of organic field-effect transistor based on pentacene with nanoparticles at the Si/pentacene interface.



This work was done in Center of Excellence CENAMOST (Slovak Research and Development Agency Contract No. VVCE-0049-07) with support of projects from grants APVV-0290-06, VMSP-P-0051-07 and projects of VEGA 1/0689/09, 1/0787/09, 1/0716/09.