

Supplementary data

In-Situ SFM study of 2D-Polyaniline Surface Confined Enzymatic Polymerization

Ruthy Sfez^a, Naama Peor^a, Sidney R. Cohen^b, Hagai Cohen^b and Shlomo Yitzchaik^{a*}

^a Department of Inorganic and Analytical Chemistry, The Hebrew University, Jerusalem 91904, Israel. Fax: +972-2658-5319 ; Tel: +972-2658-6971; E-mail: sy@cc.huji.ac.il

^b Department of Chemical Research Support, Weizmann Institute of Science, Rehovot 76000, Israel, Fax: +972-8934-4137 ; Tel: +972-8934-2703; E-mail: Sidney.Cohen@weizmann.ac.il

XPS data for different reaction steps:

All characterization were conducted on <1,0,0> n-type Si substrates with Al K α source.

Figure Captions:

Fig. 1: XPS spectrum after APT coupling agent modification (schme 1, step i), indicating N 1s signal which corresponds to different degrees of protonation of the nitrogen.

Fig. 2: XPS spectrum after SPS electrostatic adhesion (scheme 1, step ii). This spectrum shows the change in N 1s peak comparing Fig. 1 due to immersing the substrate in SPS aquas solution which causes a change in the degree of protonation of the APT coupling agent.

Fig. 3: XPS spectrum after SPS electrostatic adhesion (scheme 1, step ii) showing the appearance of the characteristic peak of S 2p at 230 eV, upon SPS adhesion.

Fig. 4: XPS spectrum after anilinium monomers electrostatic adhesion (scheme 1, step iii), showing the disappearance of the characteristic peak

of Na 1s appearing upon SPS adhesion (top line) and disappearing upon exchange reaction with the monomers (bottom line).

Fig. 5: XPS spectrum after chemical polymerization step (scheme 1, step iv), showing change in the N 1s peak, corresponding to change in oxidation and protonation state of the nitrogen.

Fig. 6: XPS spectrum after enzymatic polymerization step (scheme 1, step iv), showing change in the N 1s peak, corresponding to change in oxidation and protonation state of the nitrogen.

.

Fig.
1

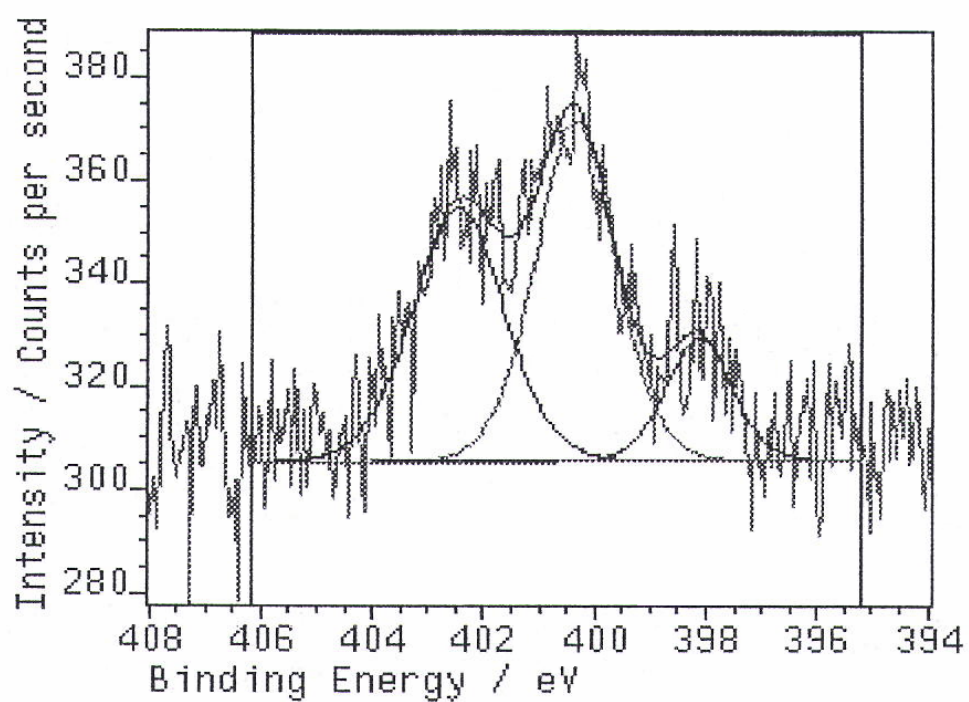


Fig.
2

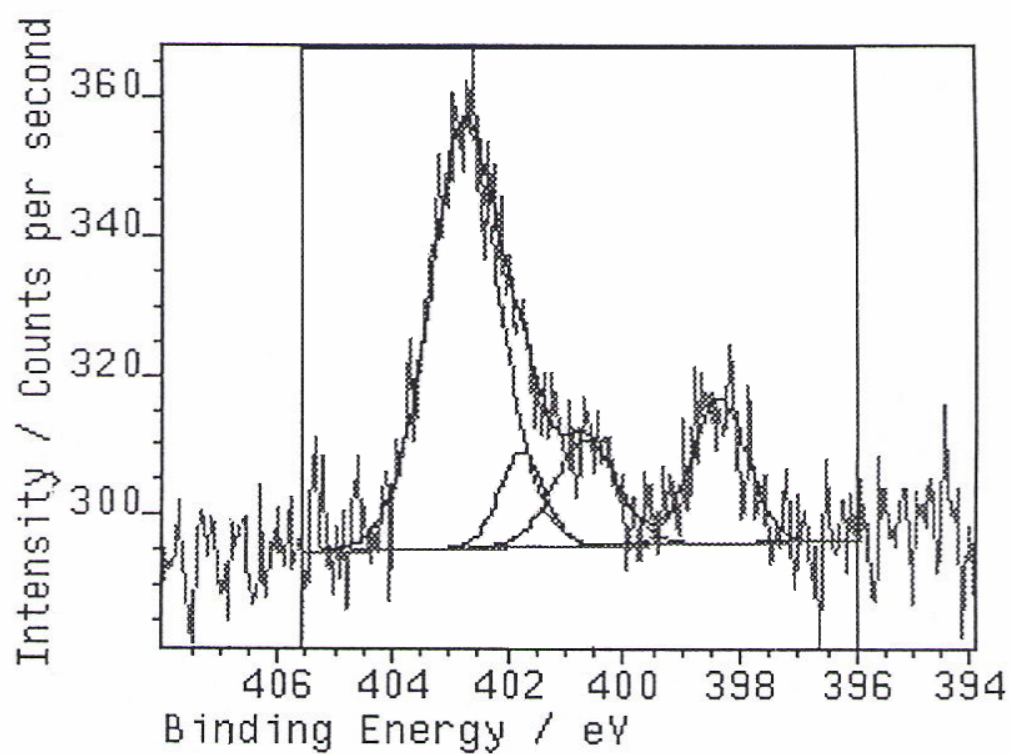


Fig. 3

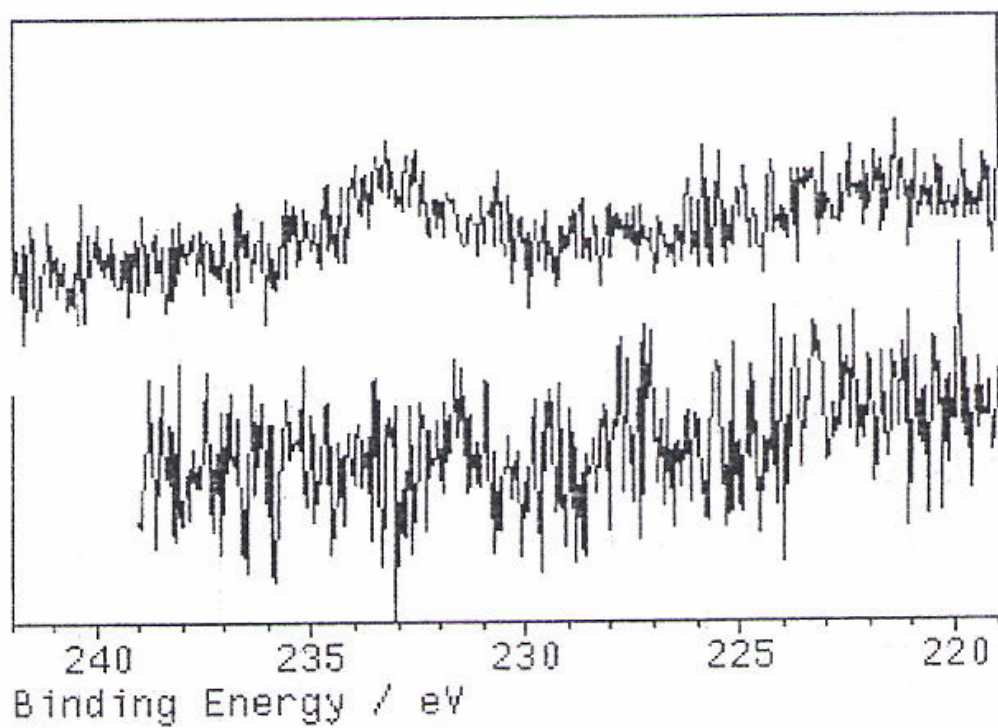
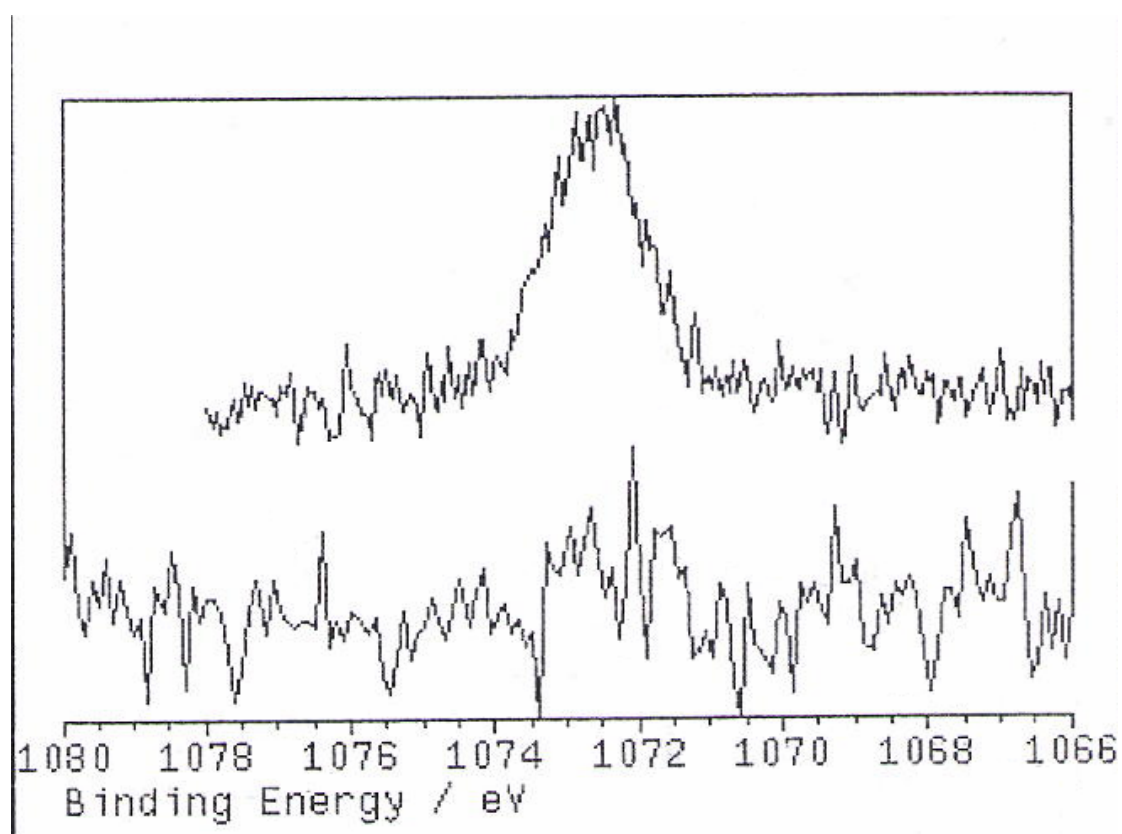


Fig. 4



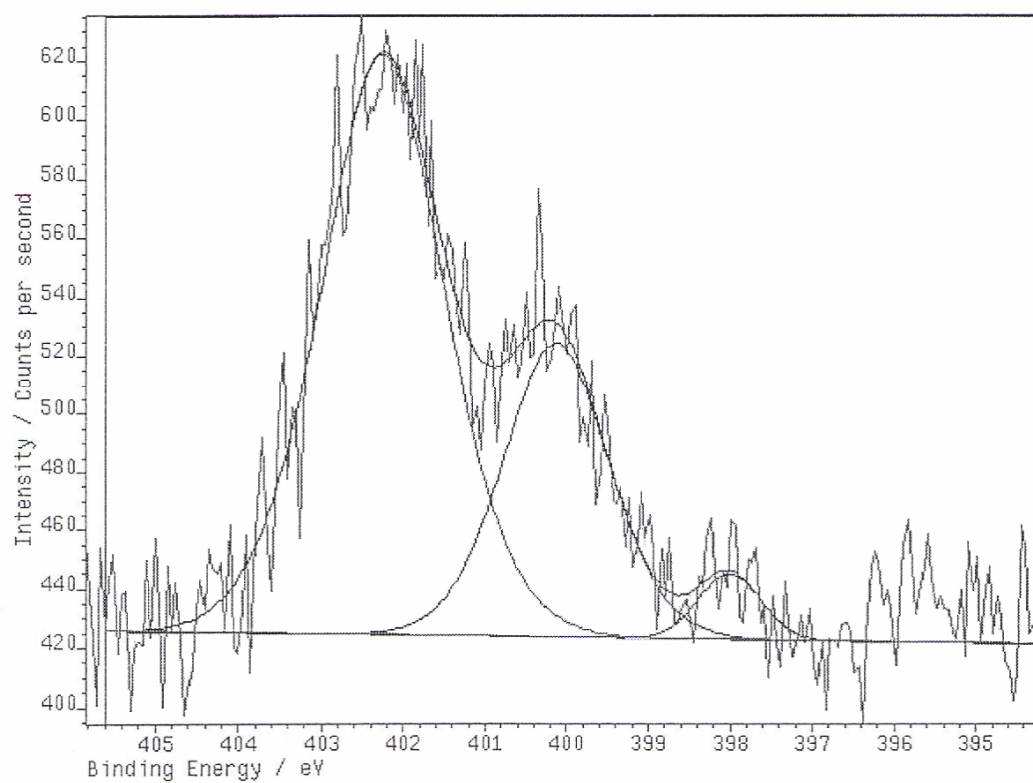


Fig. 5

Fig.
6

