SUPPLEMENTARY MATERIAL to:

# Towards Molecularly Imprinted Polypyrrole-Based Sensor for the Detection of Methylene Blue

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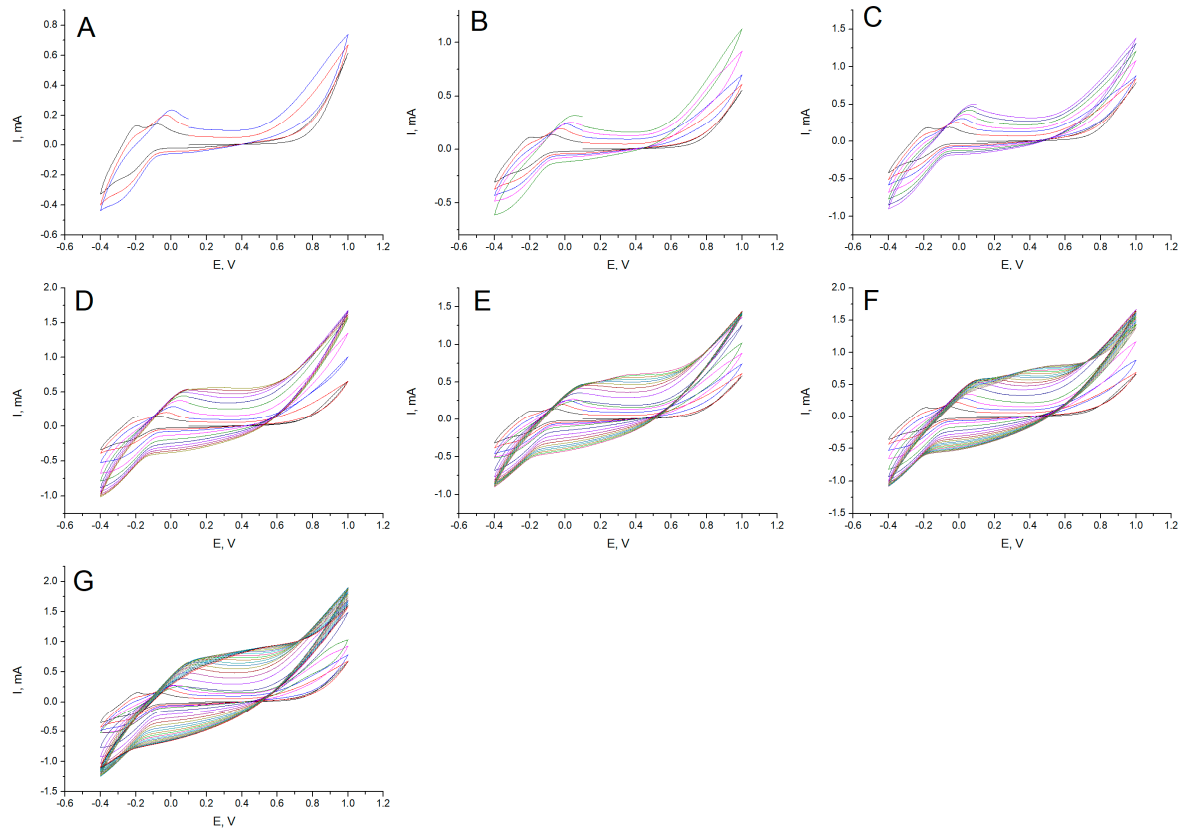



**Figure S1.** Cyclic voltammograms of Ppy-MB during electrochemical deposition. Ppy-MB layers deposited by **(A-G)** 3, 5, 7, 10, 15, 20, 25 potential cycles, respectively. Other conditions: potential was swept from –0.4 V to +1 V at a scan rate of 50 mV/s, and a step potential of 2.44 mV. Electrochemical polymerisation was performed in a three-electrode system, in which glass/ITO was used as the working electrode Ag/AgCl as the reference electrode, and platinum wire as the counter electrode.

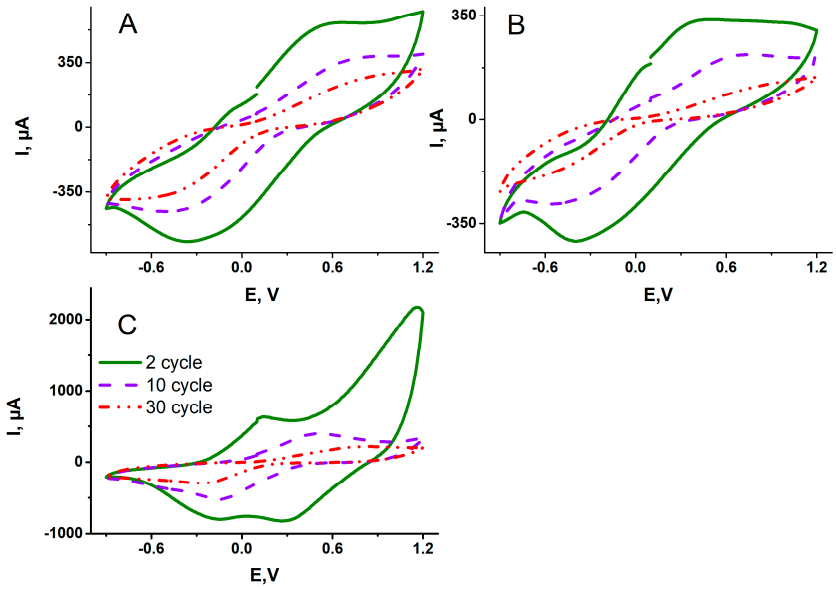
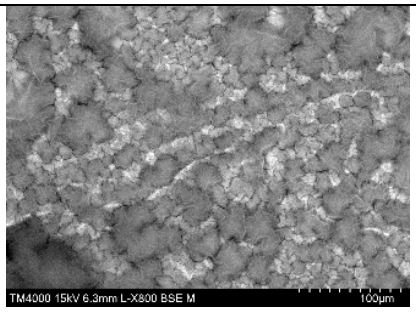
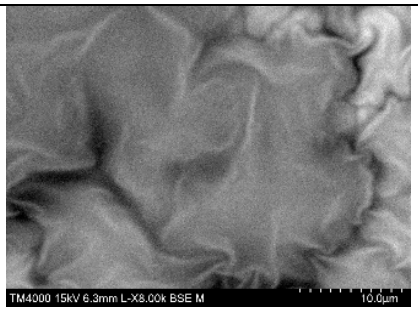
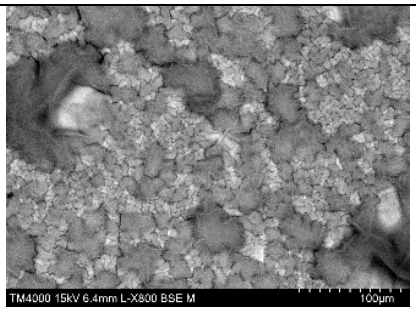
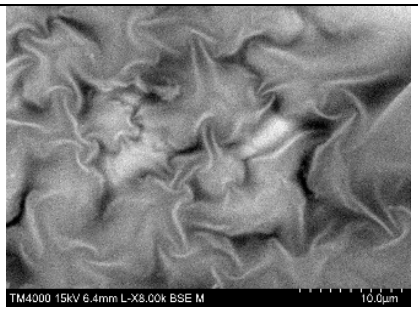
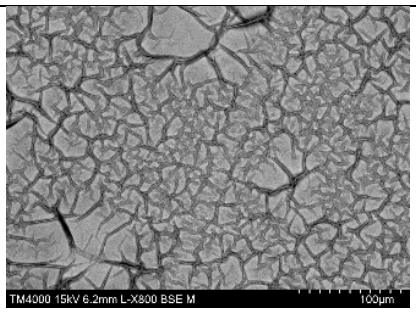
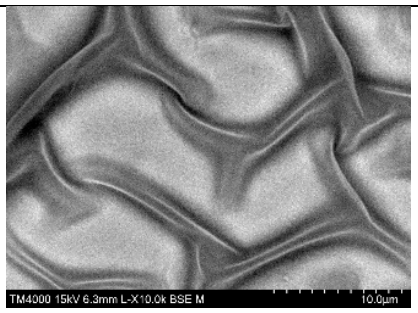
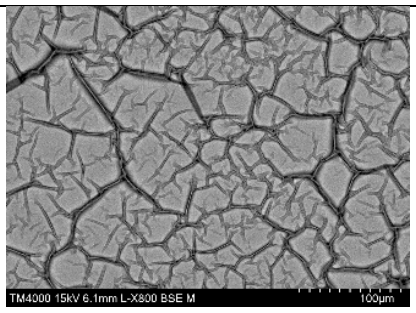
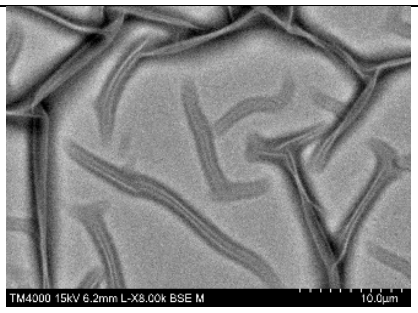
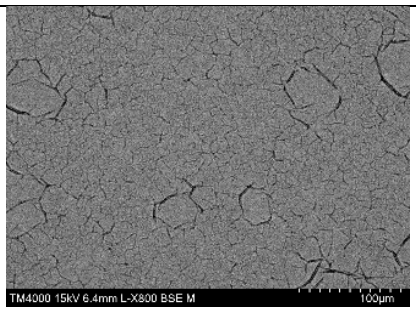
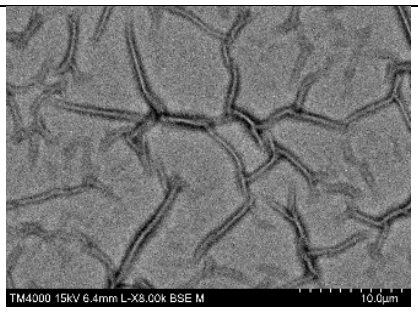



**Figure S2.** Electrode storage in different mediums (layer polymerized with 25 cycles), after 12 days, **(A)** 0,01 M BR buffer solution, pH 3; **(B)** in water; **(C)** in air. Cycling voltammograms performed in the range from -0.9 V to +1.2 V vs. $Ag/AgCl_{3M\ KCl}$ at a scan rate of 50 mV/s, a step potential of 2.44 mV, and 30 potential cycles were applied.

| | Magnification ×800 | | Magnification ×8000 |
|---|---|---|---|
| A |   | B |   |
| C |   | D |   |
| E |   | F |   |
| G |   | H |   |
| I |   | J |   |

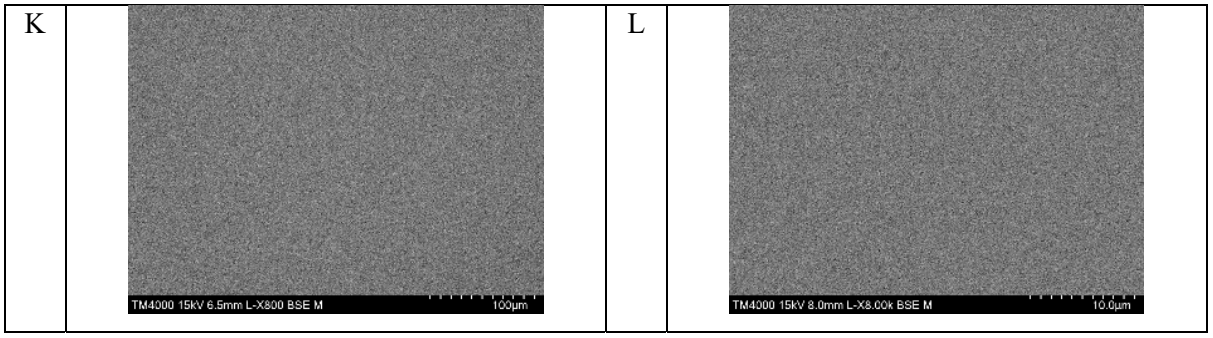



**Figure S3.** SEM images of Ppy-MB which were electropolymerized by: 25 potential cycles at magnification ×800 **(A)** and ×8000 **(B)**, 20 potential cycles at magnification ×800 **(C)** and ×8000 **(D)**, 15 potential cycles at magnification ×800 **(E)** and ×8000 **(F)**, 10 potential cycles at magnification ×800 **(G)** and ×8000 **(H)**, 7 potential cycles at magnification ×800 **(I)** and ×8000 **(J)**, and 5 potential cycles at magnification ×800 **(K)** and ×8000 **(L)**. Images of different magnifications were taken for layers of different heights (according to the number of deposition cycles), each time analysing the same layer, and choosing a similar point.

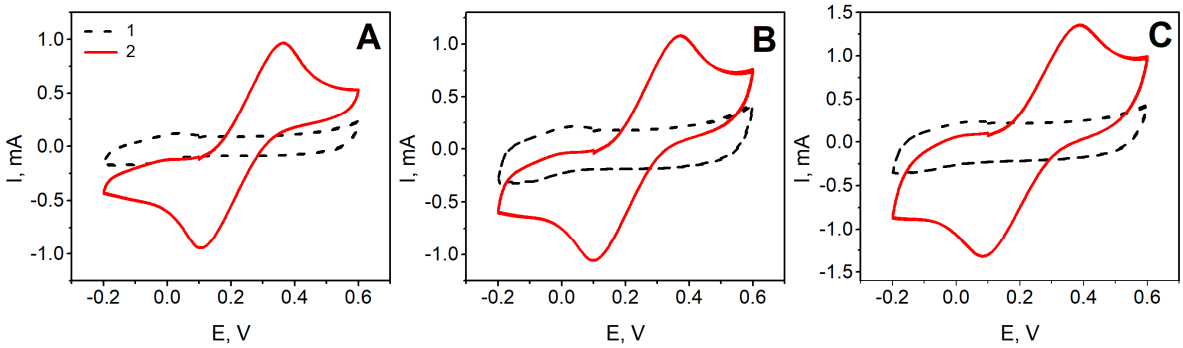



**Figure S4.** Cyclic voltammograms of differently modified electrodes were recorded immediately after deposition in the BR buffer solution without (1) and with (2) $K_3[Fe(CN)_6]/K_4[Fe(CN)_6]$ as a redox probe. **(A)** Ppy-MB-5, **(B)** Ppy-MB-7, **(C)** Ppy-MB-10 electrode. Cyclic voltammograms were recorded in the potential range from −0.2 V to +0.6 V vs. $Ag/AgCl_{3M\ KCl}$, at the scan rate of 50 mV/s and step lift of 2.44 mV, in total 3 potential cycles.

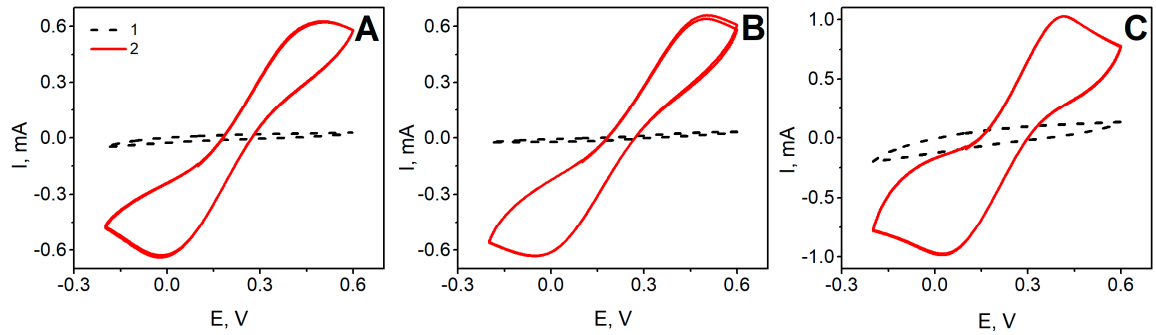



**Figure S5.** Cyclic voltammograms of differently modified electrodes were recorded six weeks after deposition in the BR buffer solution without (1) and with (2) $K_3[Fe(CN)_6]/K_4[Fe(CN)_6]$ as a redox probe. **(A)** Ppy-MB-5, **(B)** Ppy-MB-7, **(C)** Ppy-MB-10 electrode. CV conditions the same as described in Figure 4S.