

Supporting Information

Table S1. Assignment of vibrational bands of PANI and PPy in the hybrid configurations. Raman bands are marked with dark background.

Vibration	ν / cm^{-1} literature	ν / cm^{-1} in $\text{WO}_3 / \text{PANI}$	ν / cm^{-1} in $\text{TiO}_2 / \text{PANI}$	Vibration	ν / cm^{-1} PPy literature	ν / cm^{-1} in WO_3 / PPy
$\nu(\text{C-C}) / \nu(\text{C}=\text{C})$	1586-1610	1598	1600	$\nu(\text{C}=\text{C})$	1595	1588
$\nu(\text{C-C})$	1553	1555	1566	Skeletal band	1493	1495
$\nu(\text{C-N})$ protonated	1330-1350	1345	1346	$\nu(\text{C-N})$	1400	1417
$\beta(\text{C-H})$	1186	1181	1179	$\beta(\text{C-H})$	1052	1049
$\nu(\text{ring})$	603	605	606	$\nu(\text{ring})$	970	987
$\beta(\text{C-N-C})$	417	416	415	$\nu(\text{ring})$	934	932
$\nu(\text{N=Q=N})$	1591	1590	1575	$\nu(\text{C}=\text{C}/\text{C-C})$	1547	1555
$\nu(\text{C-C})+\beta(\text{C-H})$	1494	1497	1492	$\nu(\text{ring}$ breathing)	1460	1450
$\nu(\text{C-N})$ QBQ	1299	1307	1300	$\nu(\text{ring}$ breathing)	1180-1220	1215
$\nu(\text{C-N})$ benzoid	1240	1250	1246	$\nu(\text{C-C})$	1170	1160
$\nu(\text{N=Q=N})$	1160	1150	1145	$\beta(\text{C-H})$	1044	1042

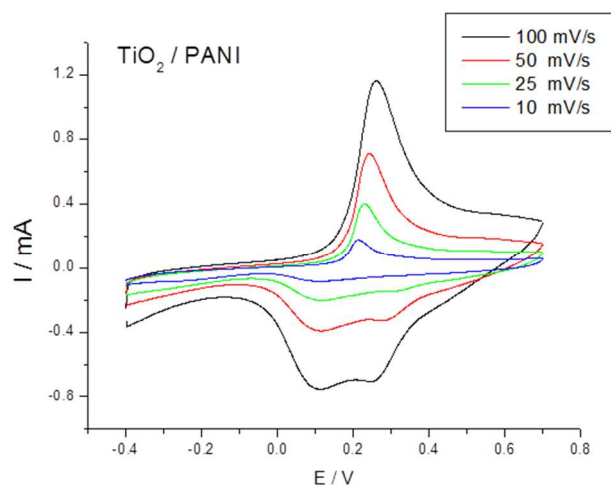


Figure S1. A: Cyclic voltammograms for the $\text{TiO}_2 / \text{PANI}$ hybrid in a solution of 0.1 M Na_2SO_4 in water at different potential scan rates.



Figure S2. Optical image of the mask used for selective illumination of certain parts of the oxide working electrodes.