Supporting Information

**Electrochemical sensor based on polyaniline-modified SnO\textsubscript{2} nanocomposite for ethephon detection**

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1. EIS Nyquist plots and equivalent circuit

The EIS spectra were analyzed using the software Zview2, a nonlinear least-square was used to fit and determine the parameters of the elements in an equivalent circuit (Fig. S1). The Randles equivalent circuit consisting of solution resistance ($R_s$), charge-transfer resistance ($R_{ct}$), constant-phase element (CPE), and Warburg impedance ($W_o$) was inset of Fig. S1.

![EIS Nyquist plots and equivalent circuit](image)

Fig. S1 EIS Nyquist plots and equivalent circuit

2. Chemical elements of SnO$_2$@PANI and SnO$_2$@PANI- ethephon

Table S1 Atomic % in SnO$_2$@PANI and SnO$_2$@PANI- ethephon

<table>
<thead>
<tr>
<th>Samples</th>
<th>Atomic %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C 1s</td>
</tr>
<tr>
<td>SnO$_2$@PANI</td>
<td>60.33</td>
</tr>
<tr>
<td>SnO$_2$@PANI+ethephon</td>
<td>43.1</td>
</tr>
</tbody>
</table>

3. N$_2$ adsorption /desorption measurements
The N\textsubscript{2} adsorption–desorption isotherms of SnO\textsubscript{2}@PANI sample is presented in Fig. S2. According to the BET analysis, the specific surface area of the composite material was obtained as 14.332 m\textsuperscript{2}/g.

![N\textsubscript{2} adsorption and desorption isotherm of SnO\textsubscript{2}@PANI nanocomposite.](image)

Fig. S2 (a) N\textsubscript{2} adsorption and desorption isotherm of SnO\textsubscript{2}@PANI nanocomposite.

4. Other interferences

![ΔR\textsubscript{ct} values for ethephon detection](image)

**Fig. S3** ΔR\textsubscript{ct} values for the ethephon detection in the absence (a) and presence of 3 ng/mL of glucose (b), citric acid (c), oxalic acid (d), PO\textsubscript{4}\textsuperscript{3−} (e), SO\textsubscript{4}\textsuperscript{2−} (f), NO\textsubscript{3}− (g), Cu\textsuperscript{2+} (h), Fe\textsuperscript{3+} (i), Pb\textsuperscript{2+} (j), Hg\textsuperscript{2+} (k), methyl parathion (l), carbofuran (m), and p-nitrophenol (n).