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Electrochemical Anodic Oxidation Synthesis of TiO2 nanotube as Perspective Electrode for the Detection of Phenyl Hydrazine

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Abstract : TiO2 nanotube (NT) arrays were grown on titanium (Ti) foil substrate by electrochemical anodic oxidation and utilized as working electrode to fabricate a highly sensitive and reproducible chemical sensor for the detection of harmful phenyl hydrazine chemical. The fabricated chemical sensor based on TiO2 NT arrays electrode exhibited high sensitivity of ~40.9 µA.mM-1.cm-2 and detection limit of ~0.22 µM with short response time (10s).

Keywords : TiO2 NT, phenyl hydrazine, chemical sensor, sensitivity, electrocatalytic properties
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