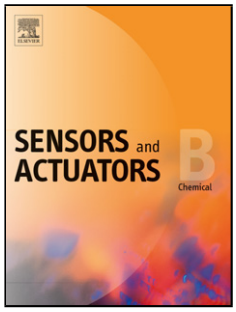


Title: Functionalised CuO nanostructures for the detection of organophosphorus pesticides: A non-enzymatic inhibition approach coupled with nano-scale electrode engineering to improve electrode sensitivity

Authors: Mawada Mohamed Tunesi, Nazar Kalwar, Malik Waseem Abbas, Selcan Karakus, Razium Ali Soomro, Ayben Kilislioglu, Muhammad Ishaq Abro, Keith Richard Hallam

PII: S0925-4005(18)30084-4
DOI: https://doi.org/10.1016/j.snb.2018.01.084
Reference: SNB 23933

To appear in: *Sensors and Actuators B*

Received date: 17-9-2017
Revised date: 3-1-2018
Accepted date: 5-1-2018

Please cite this article as: Mawada Mohamed Tunesi, Nazar Kalwar, Malik Waseem Abbas, Selcan Karakus, Razium Ali Soomro, Ayben Kilislioglu, Muhammad Ishaq Abro, Keith Richard Hallam, Functionalised CuO nanostructures for the detection of organophosphorus pesticides: A non-enzymatic inhibition approach coupled with nano-scale electrode engineering to improve electrode sensitivity, Sensors and Actuators B: Chemical https://doi.org/10.1016/j.snb.2018.01.084

Functionalised CuO nanostructures for the detection of organophosphorus pesticides: A non-enzymatic inhibition approach coupled with nano-scale electrode engineering to improve electrode sensitivity

Mawada Mohamed Tunesi[a], Nazar Kalwar[b], Malik Waseem Abbas[c], Selcan Karakus[a] Razium Ali Soomro[d*] Ayben Kilislioglu[a], Muhammad Ishaq Abro[e], Keith Richard Hallam[d]

[a] *Department of Chemistry, Istanbul University, Istanbul, 34320, Turkey*

[b] *Department of Mechanical Engineering, University of Selcuk, Campus, 42079 Konya, Turkey*

[c] *National Institute for Biotechnology and Genetic Engineering (NIBGI), Faisalabad 3800, Pakistan*

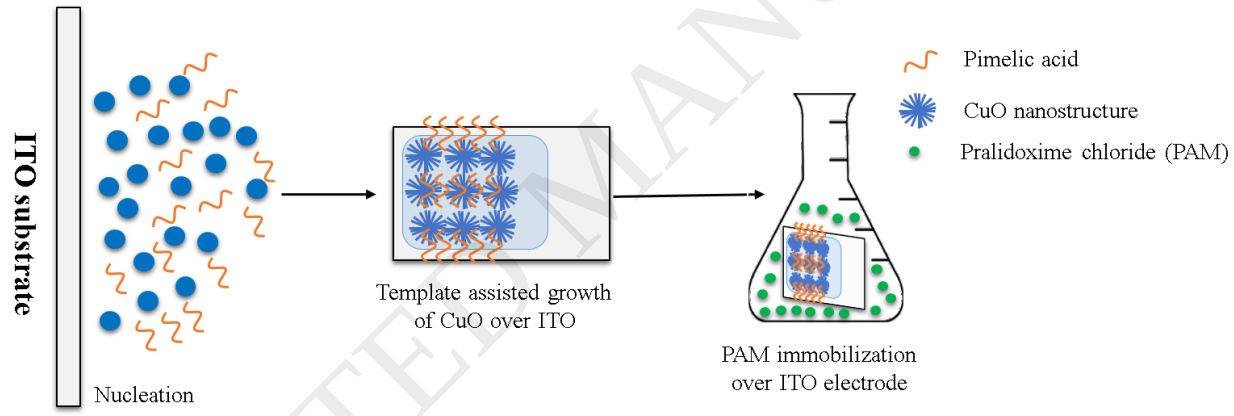
[d] *Interface Analysis Centre, School of Physics, University of Bristol, Bristol, BS8 1TL, UK*

[e] *Department of Metallurgy and Materials Engineering, Mehran University of Engineering & Technology, Jamshoro 76080, Pakistan*

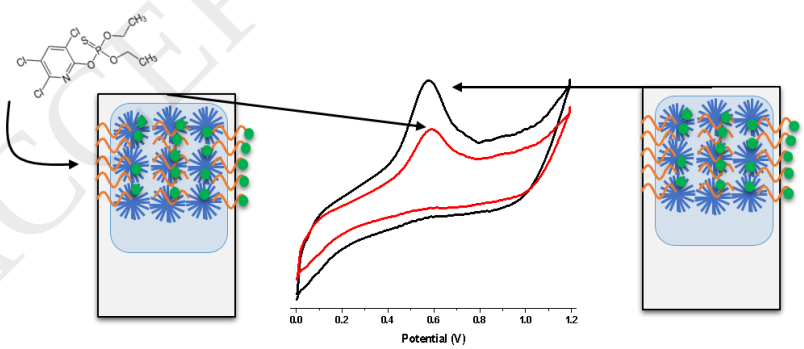
*Corresponding author. Tel.: +92 333-2761963

E-mail address Razium Ali Soomro (raziumsoomro@gmail.com)

Graphical Abstract



Template assisted in-situ growth of CuO nanostructures



Signal inhibition of PAM immobilised electrode in the presence of chlorpyrifos

Highlights

- One pot in-situ growth and functionalization of CuO nanostructures
- Inhibition sensor for detection of pesticides