

Title:

Liquid Phase Plasma: New Concept and Applications of Green Synthesis

Abstract:

We are facing an era of economic and technological boom, yet in many ways confronted by numerous rules and regulations proposed by government or private environmental agencies that may, at the end, strangle the development of modern society. Therefore, effective alternatives should be considered as part of the economy-environment balanced development blueprint. Our work focuses on the development of a unique system, liquid phase plasma (LPP), that can deliver the task of clean synthesis of metal oxides with controllable parameters. [1,2] The eye-catching feature of the design is primarily based on the belief of reducing the use of chemical to minimum or even zero during synthesis processes. The effort to realize a highly sensitive SPEC-based glucose sensor with LPP synthesized nano-CuO modification is demonstrated. The performance of the CuO-modified sensor shows improved electrochemical response, low detection limit and wide linear range, and this positive outcome enables us to reposition our research to break new ground on the field of unimaginable possibilities.

REFERENCES:

- [1] J. H.C. Yang, et al. "Liquid Phase Pulsed Discharge as a Chemical-Free Green Method for α -Alumina Synthesis" *Plasma Processes and Polymers*, Vol. 13 (11) pp 1061–1068, 2016.
- [2] J. H.C. Yang, et al. "Green Synthesis of Copper Oxide by Pulsed Discharge in Liquid" (submitted)