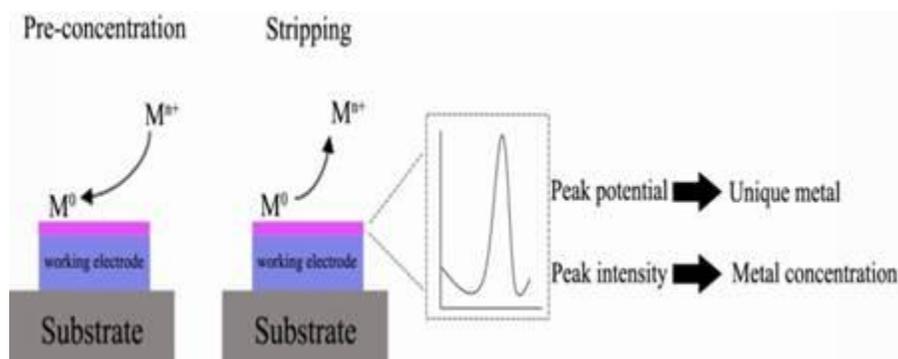


Project Summary

Project Title : High Performance Biofuel Cells Based on Novel Conducting Polymers Nanocomposites.



Objectives:

This project aims to develop next-generation biofuel cells capable of generating clean, sustainable, and efficient energy through glucose electrooxidation. Novel organic amine-based monomers are designed and electropolymerized to fabricate high-performance nanocomposite electrodes incorporating metallic nanoparticles (Pd, Pt, Ni). The electrodes will exhibit superior electroactivity, robustness, and stability for industrial-scale green energy applications.

Partners:

- **Egyptian Partner:** British University in Egypt (BUE), led by **Assoc. Prof. Ziad Khalifa**, Faculty of Engineering.
- **Indian Partner:** Indian Institute of Technology Bombay (IIT Bombay), led by **Prof. Santosh J. Gharpure**, Department of Chemistry.

Funding Agency:

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Expected Results:

- Synthesis of innovative organic amine monomers for conducting polymer nanocomposites.
- Fabrication of efficient nano-modified electrodes for direct glucose oxidation.
- Creation of robust, low-cost, and environmentally friendly biofuel cells capable of industrial implementation.
- Strengthened research collaboration between Egypt and India through staff and student exchanges.
- Publication of results in high-impact international journals and potential patent applications.