

Micrometre-scale gel probes of scanning gel electrochemical microscopy (SGECM): From fabrication to characterization

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Abstract

Scanning gel electrochemical microscopy (SGECM) is a scanning probe technique that localizes the electrode and the electrolyte using gel probes. The gel probe is fabricated by coating gel with controlled shape on a micro-disk electrode, by electrodeposition. This is an efficient method for coating small surfaces, yet also limits the choice of polymer. In previous work, we have electrodeposited chitosan as gel probes due to the well-known chemistry of the process, but the properties of gel are still desired to be improved. Glutaraldehyde is a classical cross-linker and selected for this preliminary work. The obtained probe mechanical strength and electrochemical performance are evaluated.