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Recent advances in electrochemistry by scanning electrochemical microscopy

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Highlights

- We reviewed the development of Scanning electrochemical microscopy and its application in recent years
- We summarized the innovation on the probe and the advantages of coupling techniques.
- We focus on the progress in photoelectric imaging and biological analysis.

Abstract

Scanning electrochemical microscopy(SECM) has made great progress in recent years **with respect to both technology and applications**. This **manuscript is** an expansion of the review published in *Analytica chimica acta* in the year of 2007 **by our group**.

The review briefly presents the principle and instrumentation of SECM. Then we focus on **the application of SECM** in several **areas** such as charge transfer, solar cells, imaging, bioanalysis in recent years. SECM can capture real time (electro)chemical information at a micro interface which helps us to explore the microscopic world. SECM is also **employed** to **investigate** the complicated electron transfer system and biosamples. **Last seven years literature infers SECM is a comprehensive characterization tool when it is combined with other techniques**.

Keywords: SECM, **ultramicroelectrode**, interface, imaging, bioanalysis

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