

# Carbon-Polymer Composite Chip as Electrode Platform †

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**Abstract:** The properties of electrodes play a crucial role in the processes occurring on them. Therefore, the electrodes have seen several paradigms as technology advanced. Among the carbon-based composite electrodes, the Carbon Paste Electrode (CPE) [1] is prevalent. In CPE the conducting carbon and an organic matrix are milled together to form a moderately thick paste. Followed by the paste was filled in a Teflon or glass tube and used as an electrode. Although due to dimensional constraints and semi-solid nature, these electrodes were not able to earn popularity in the commercial landscape. This leads to the development of Screen Printed Electrode (SPE), which is very convenient in miniaturized commercial devices due to chip-like morphology. Later several other self-standing polymer-carbon composites were reported. We have developed a general-purpose electrode, the “Plastic Chip Electrode” (PCE) [2]. PCE is a bulk conducting, self-standing, composite electrode of carbon. This talk will discuss the fabrication, characterization, and application of PCE [3-5].

**Keywords:** carbon-polymer composite chip; electrochemical sensor; analytical chemistry.

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## Conflicts of Interest

The authors declare no conflict of interest.

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