Advanced Makerspaces for PiLot production by micro-Enterprises

Electrochemical & Surface Profiling

Characterization of printed electronics

Introduction

- Printed electronics require both electrical and physical characterization to ensure functionality and reliability. Electrochemical analysis with a potentiostat provides insight into electrical performance, while surface profiling reveals structural quality such as roughness and layer thickness.

Applications

- Potentiostats are used to study electrochemical behavior, verify conductivity, and test sensor functionality under controlled conditions. Profilometers complement this by measuring topography and detecting defects that affect device performance.

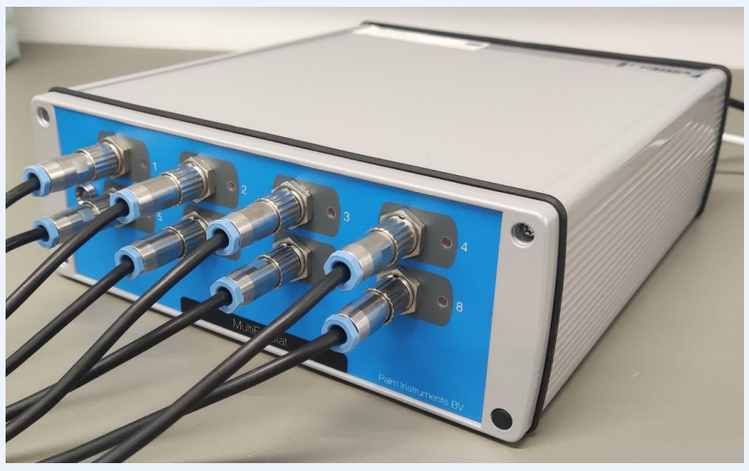
Available technologies

- PalmSens potentiostats are available in both single-channel and multi-channel configurations, enabling electrochemical characterization of printed electronics and sensor testing using multiple techniques such as cyclic voltammetry, chronoamperometry, and impedance spectroscopy. For surface analysis, a non-contact line confocal profilometer is used to measure topography and layer thickness in printed, hybrid, and flexible electronics.

Technical Specifications

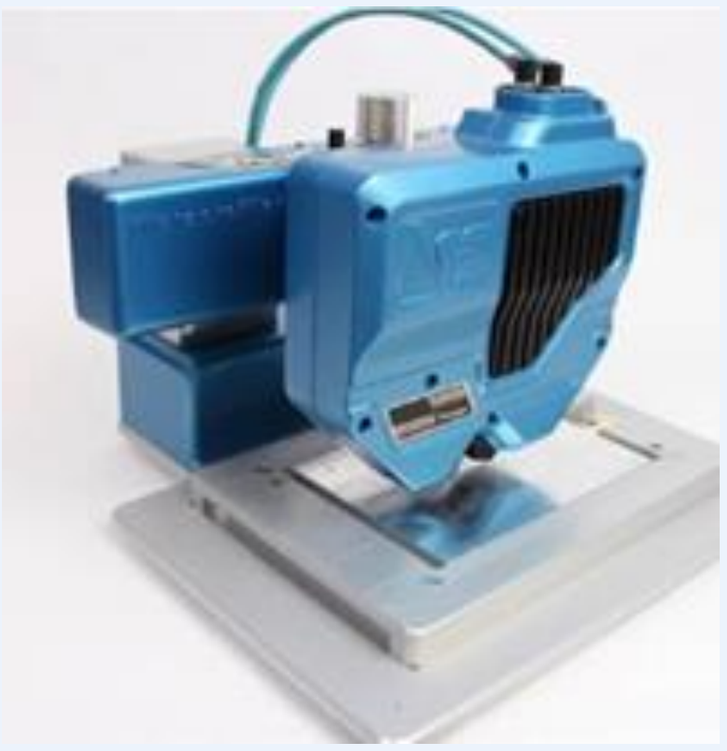
- Potentiostats provide voltage ranges from millivolts to several volts and current sensitivity down to nanoamperes, suitable for sensor testing. Profilometers achieve vertical resolution in the nanometer scale and scan areas from micrometers to centimeters for detailed surface analysis

Potentiostats



PalmSens 8-channel MultiEmStat2 potentiostat

PalmSens Potentiostat/galvanostat



Line confocal imaging profilometer

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Co-funded by the European Union
Northern Periphery and Arctic
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