

UMF Equipment - Protochips Poseidon Select System

Liquid Flow, Heating or Electrochemistry in TEM

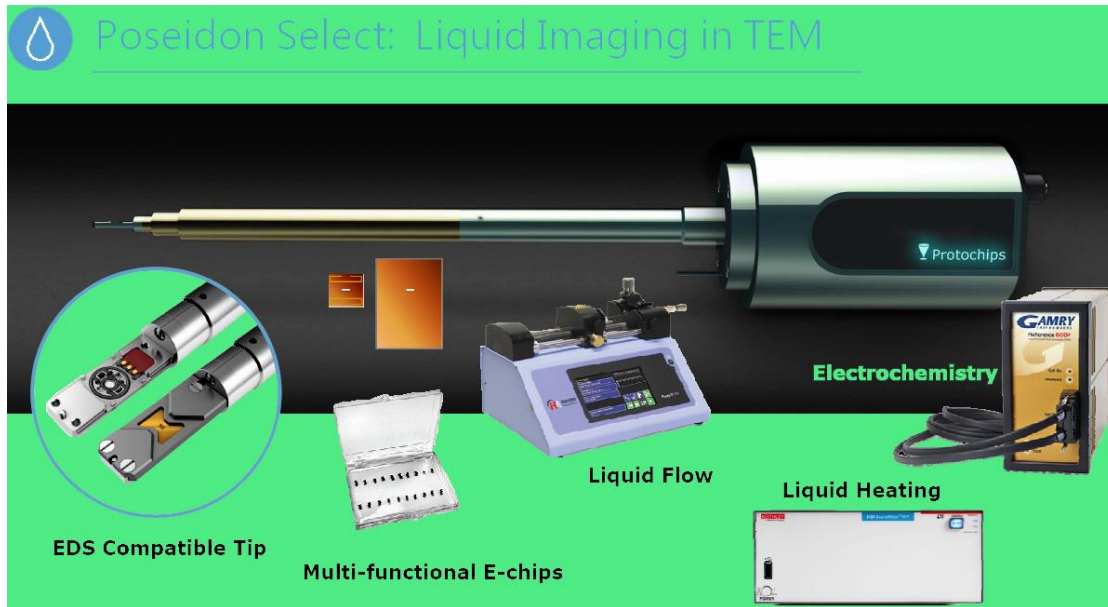
The Poseidon Select System can image samples in hydrated environments and view chemical and structural changes in real time at nano-scale inside TEM. Poseidon Select creates a miniature liquid cell inside the TEM. It enables you to visualize numerous nano-scale processes in their native environment such as corrosion, particle analysis, biological materials and battery materials. Featuring self-aligning parts and numerous E-chip configurations, Poseidon Select expands the capability of microscope with unmatched experiment simplicity.

- Features:
- Liquid heating: RT-100 °C
 - Accuracy <4%
 - Heating rate: 300 °C/min
 - Cooling rate: 10 °C/min
 - Thermal Stability: 0.05 °C
 - EDS Capable
 - Low current, Low noise
 - Operation - Full Software Control
 - Three Electrodes & three Liquid ports (mixing)

Please refer to <https://www.protochips.com/products/poseidon-select/> for further details of the system.

For any enquiry, please contact Dr. Wei Lu (Tel: 34002077; Email: wei.lu@polyu.edu.hk).

Description of Instrument



Application of Instrument

Dendrimer Formation in Batteries

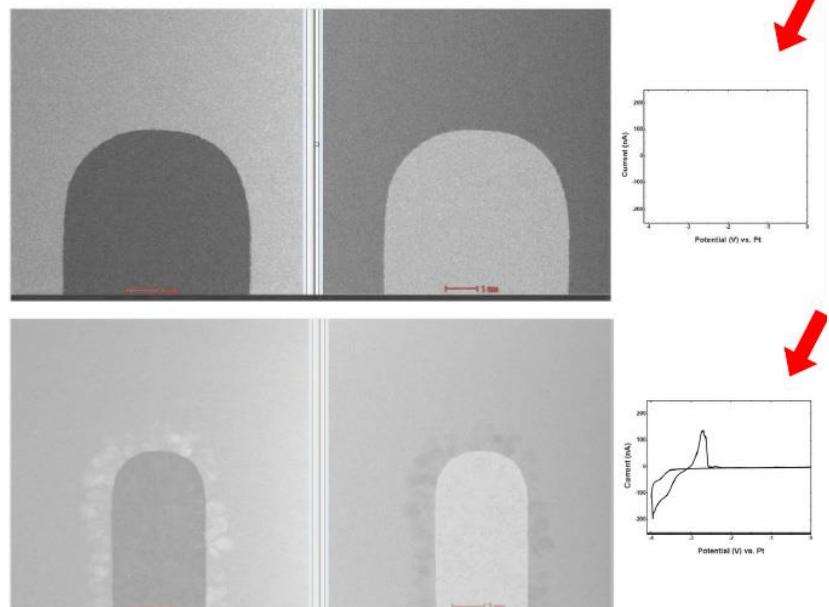
Lithium Batteries

Dendrite formation during lithium deposition and dissolution along the solid electrolyte interphase (SEI)

“Dead lithium” leads to:

- Internal short circuits
- Capacity fading

≤ 0.3 electrons/ $\text{\AA}^2/\text{s}$
Platinum working electrode
LiPF₆/PC electrolyte



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Liquid Thickness: 650 nm; 300 KV STEM