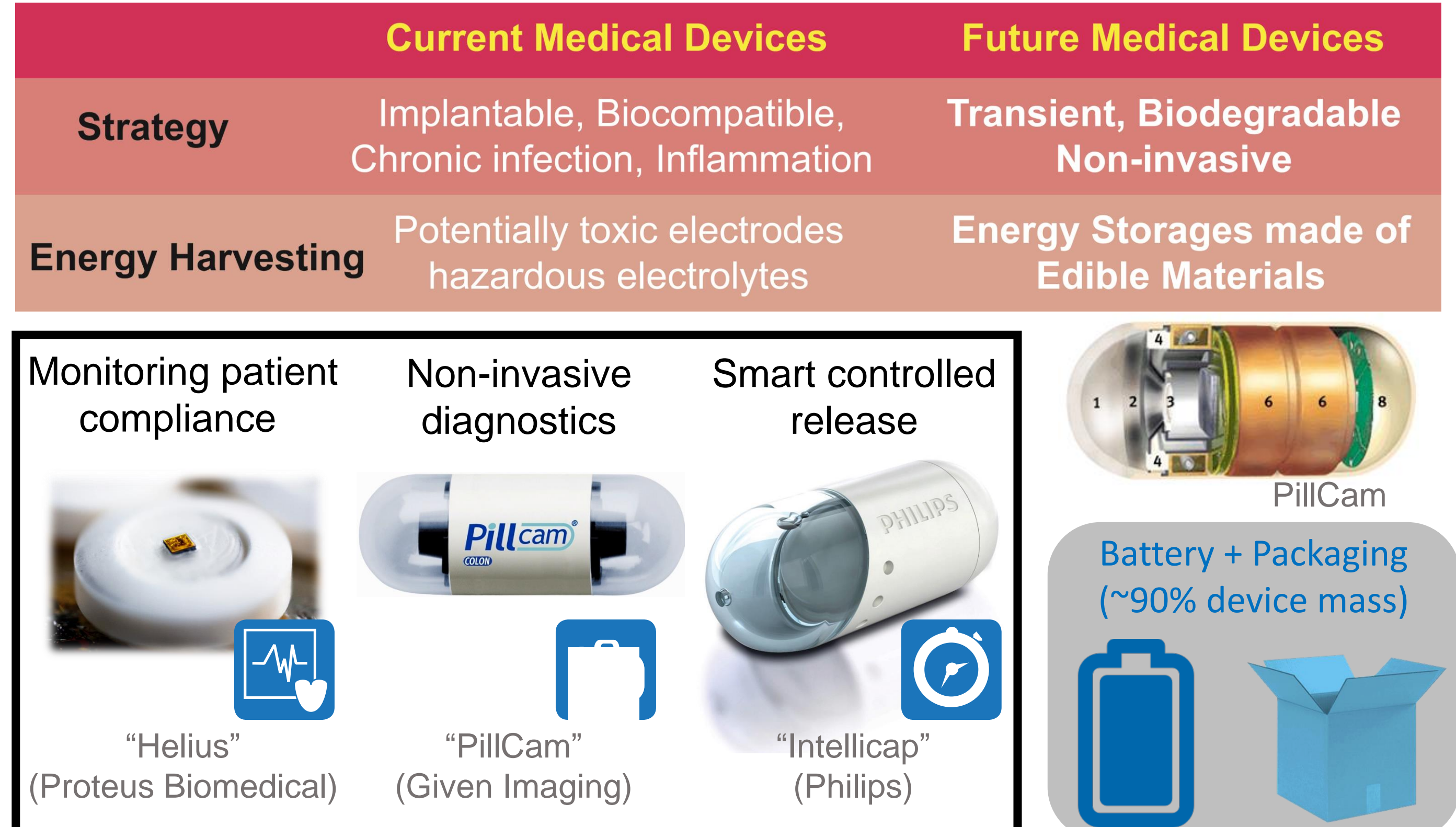
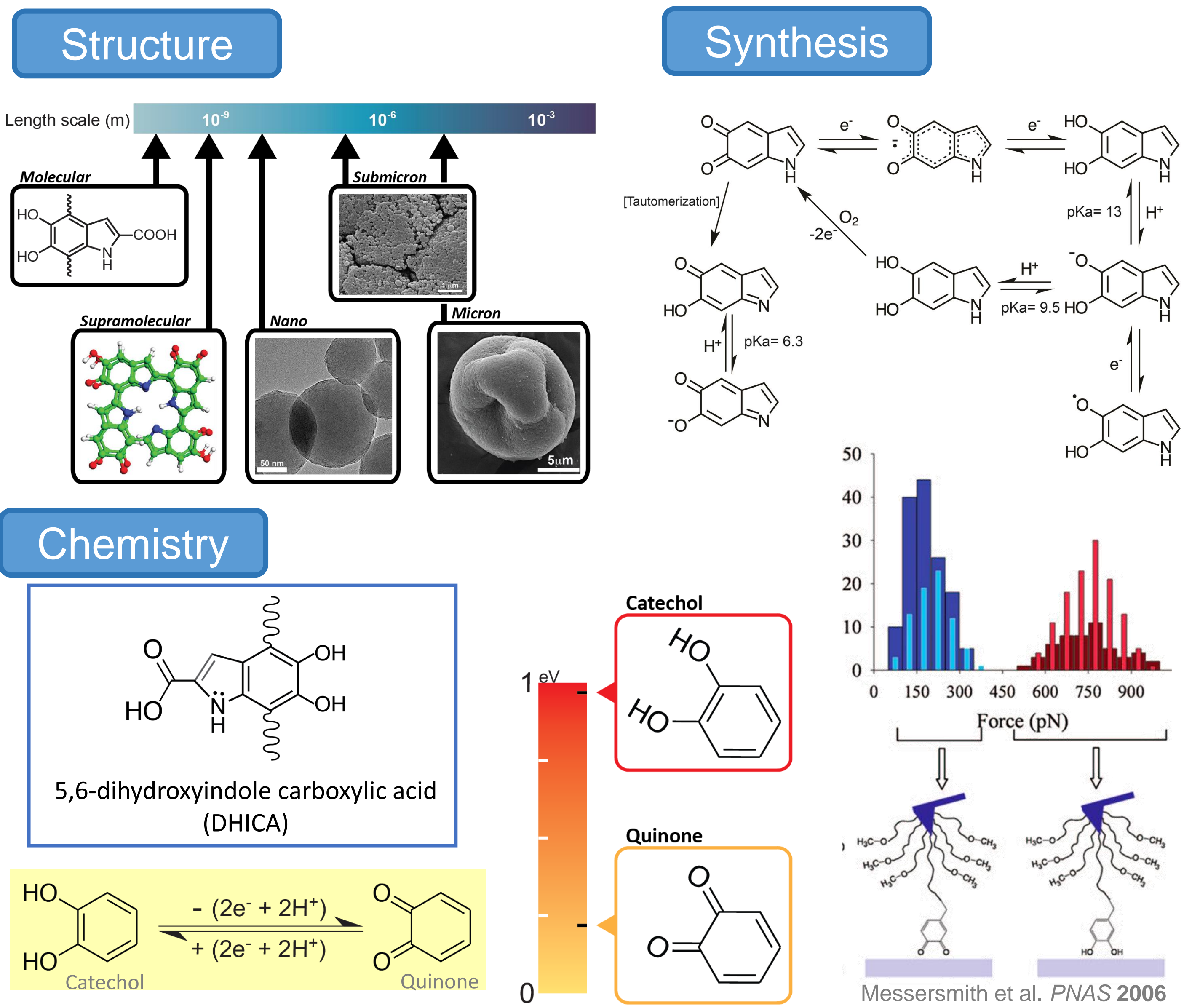


Edible electronics biomedical devices

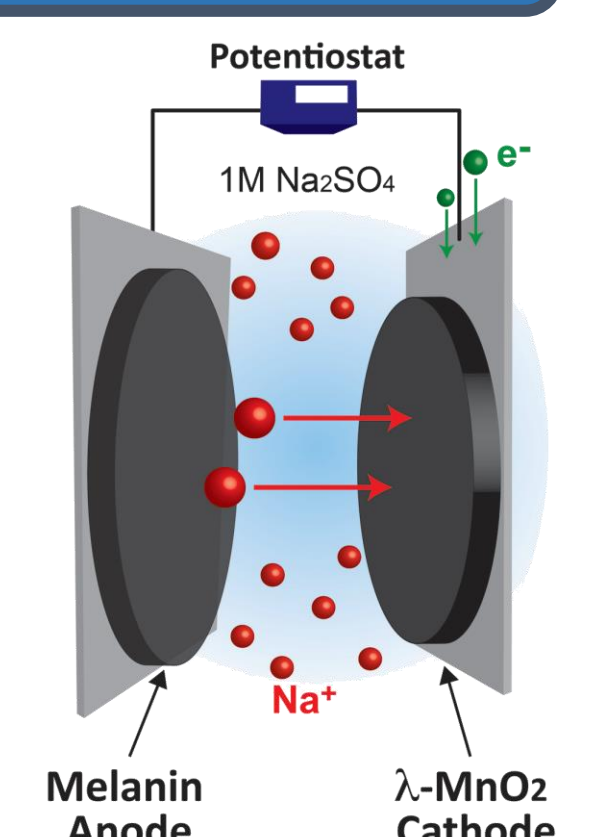
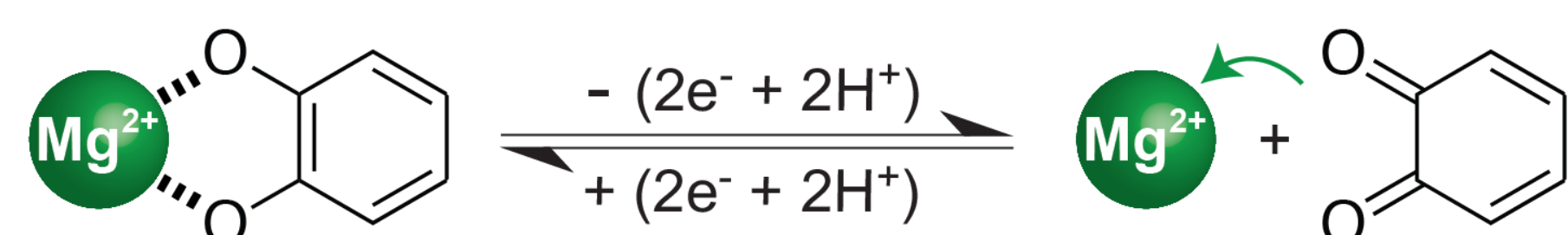


Biodegradable energy storage using melanin pigments



Technical challenges of eumelanin pigments

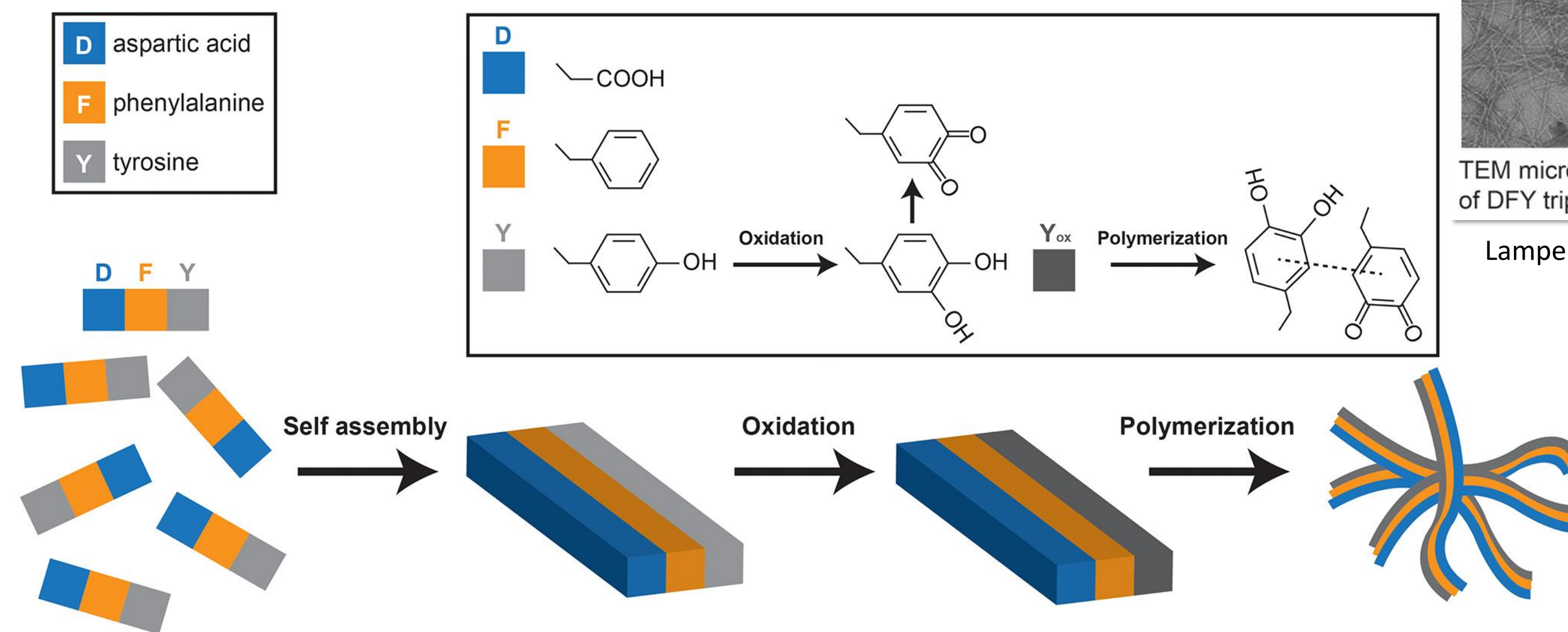
- Naturally-occurring eumelanin pigments can be used as charge storage materials when paired with Na⁺ and Mg²⁺ in aqueous environment.
- Limited charge storage capacity due to the nature of the structure
 - Extremely difficult to control topography of melanins during synthesis



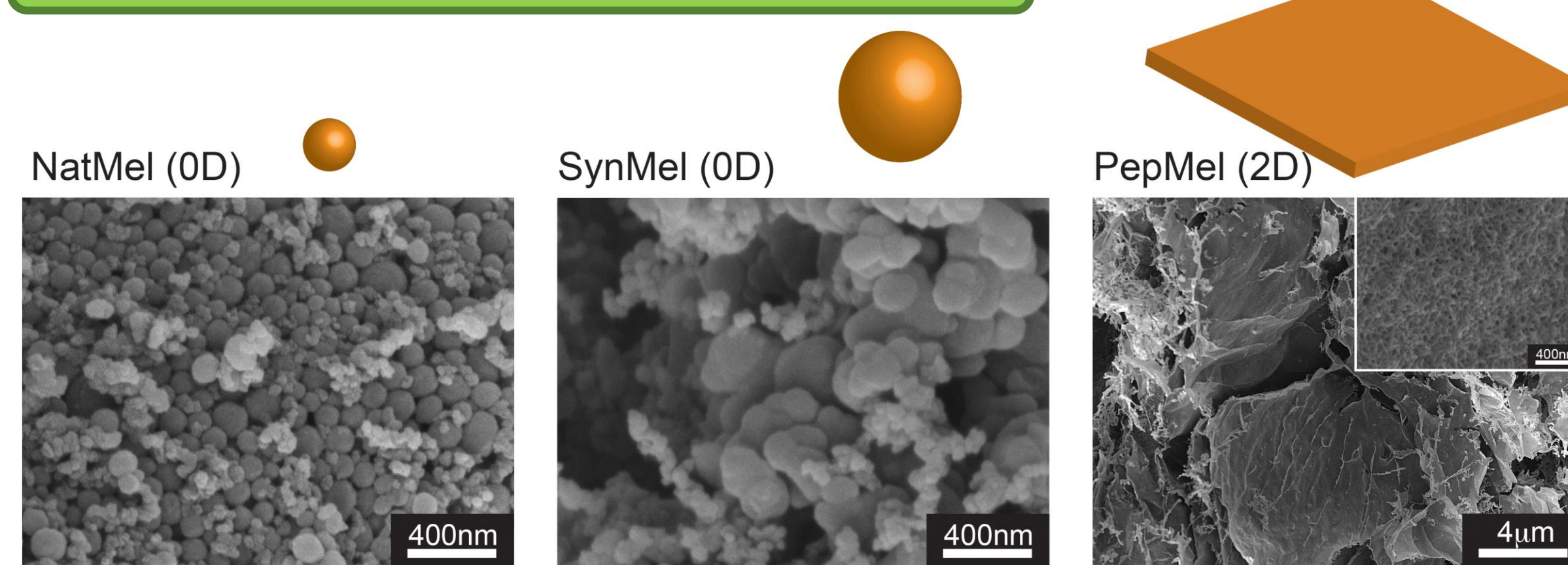
How to control topography of melanins?

Synthesis using peptide template

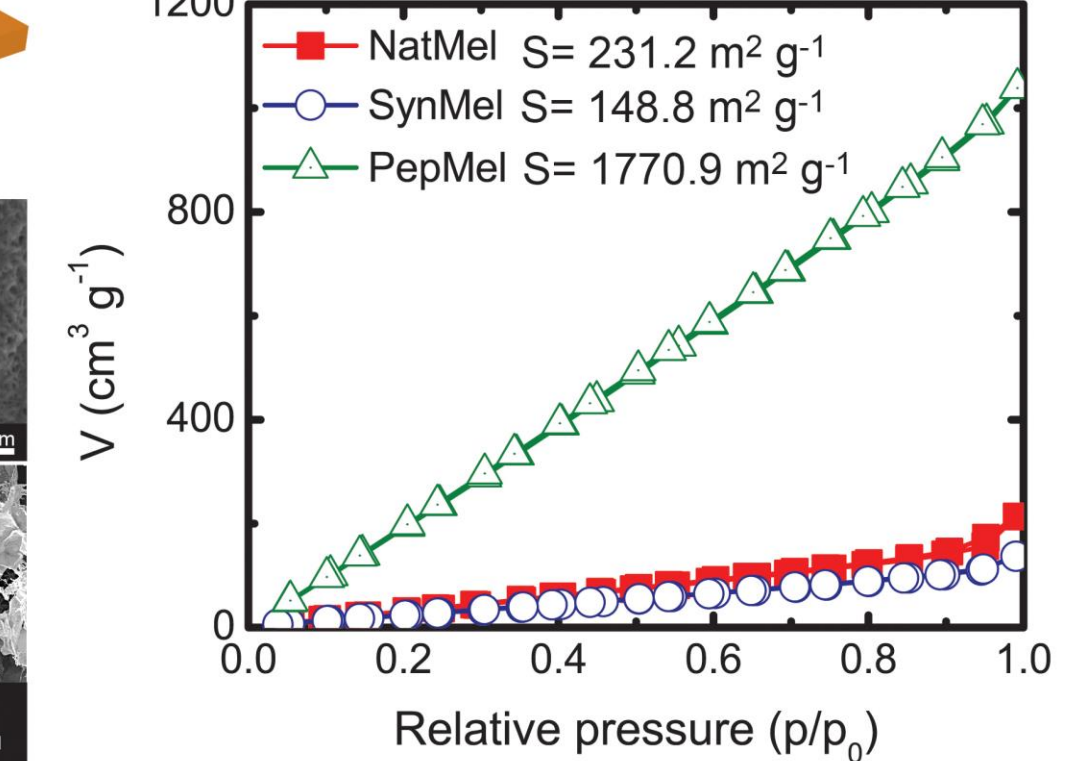
Collaboration with Prof. Uljin at City Univ of New York



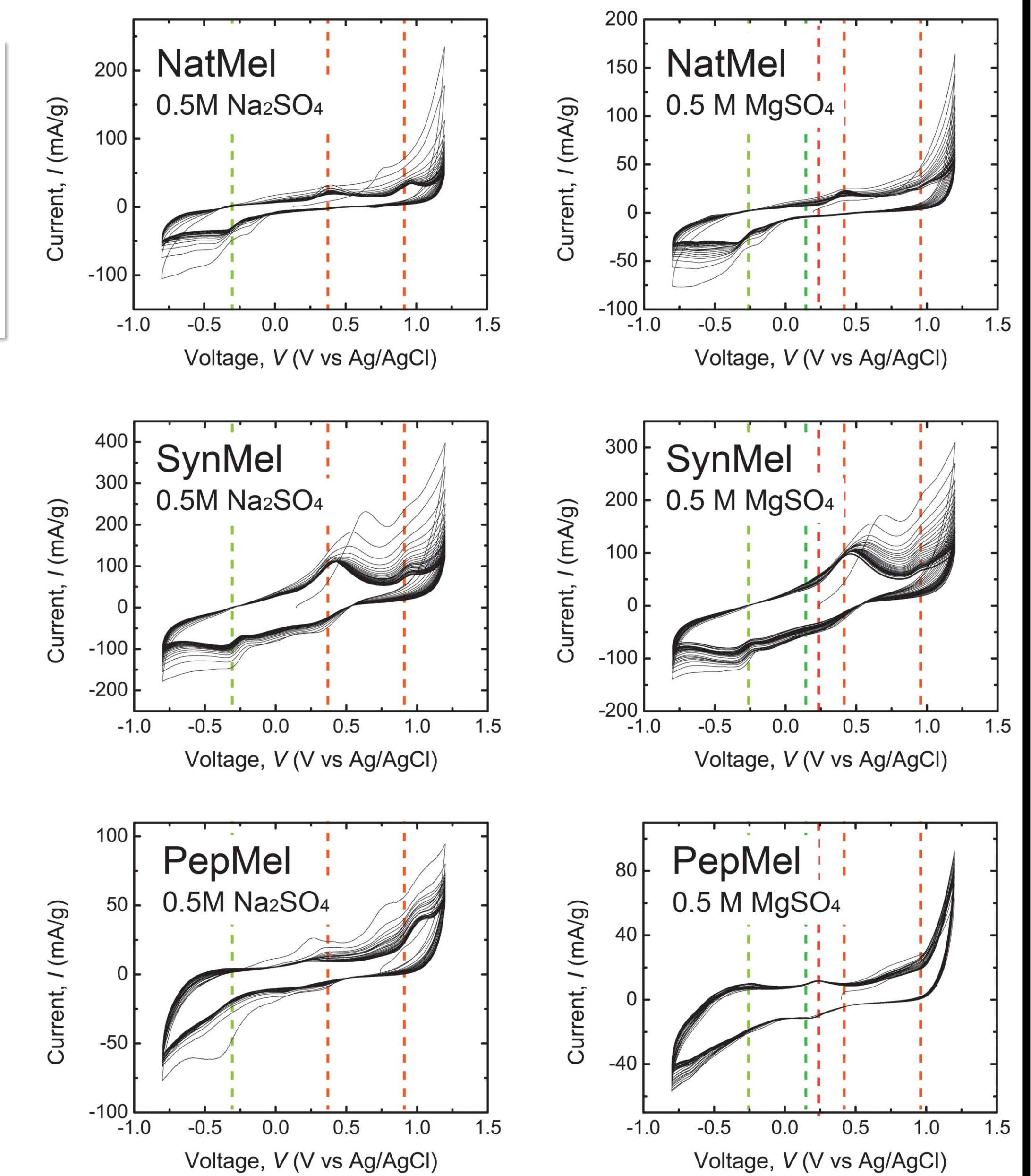
Types of melanin samples



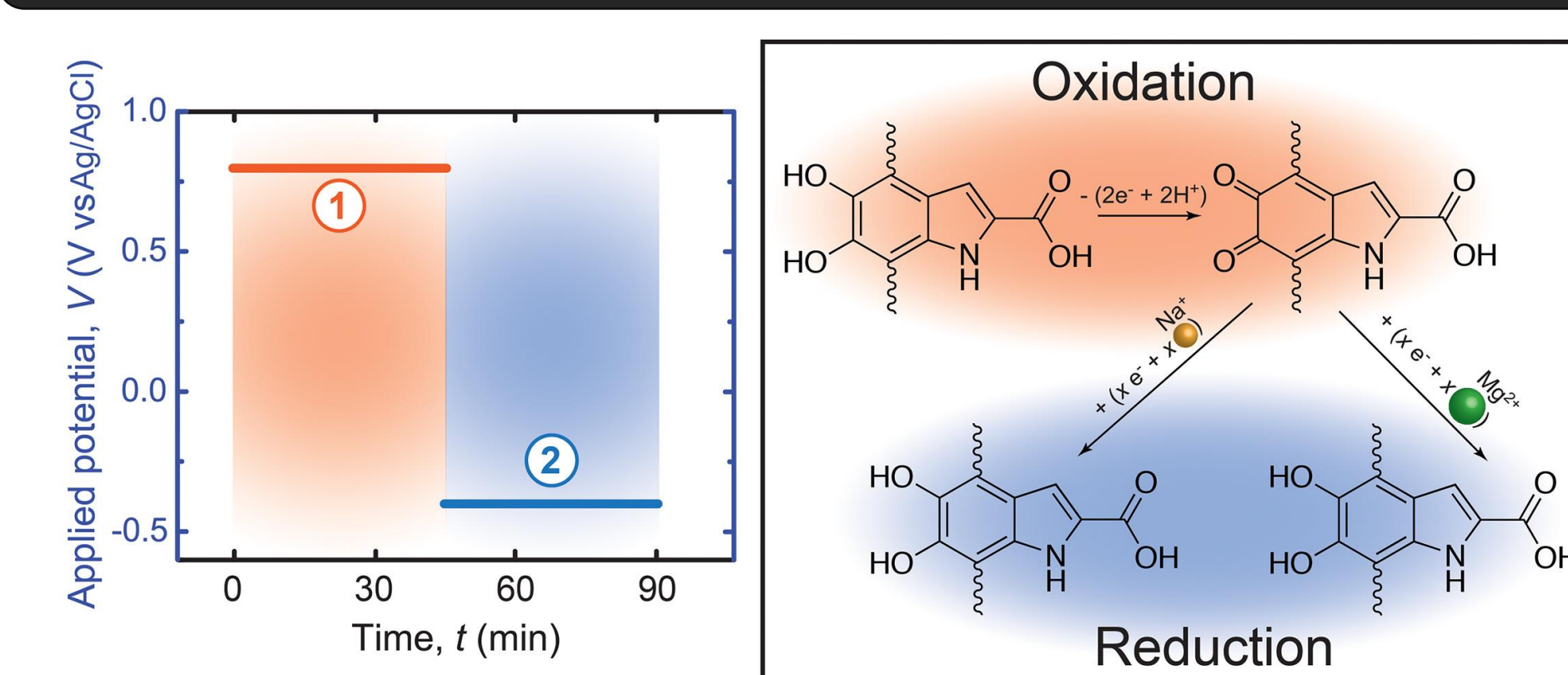
BET Isotherm



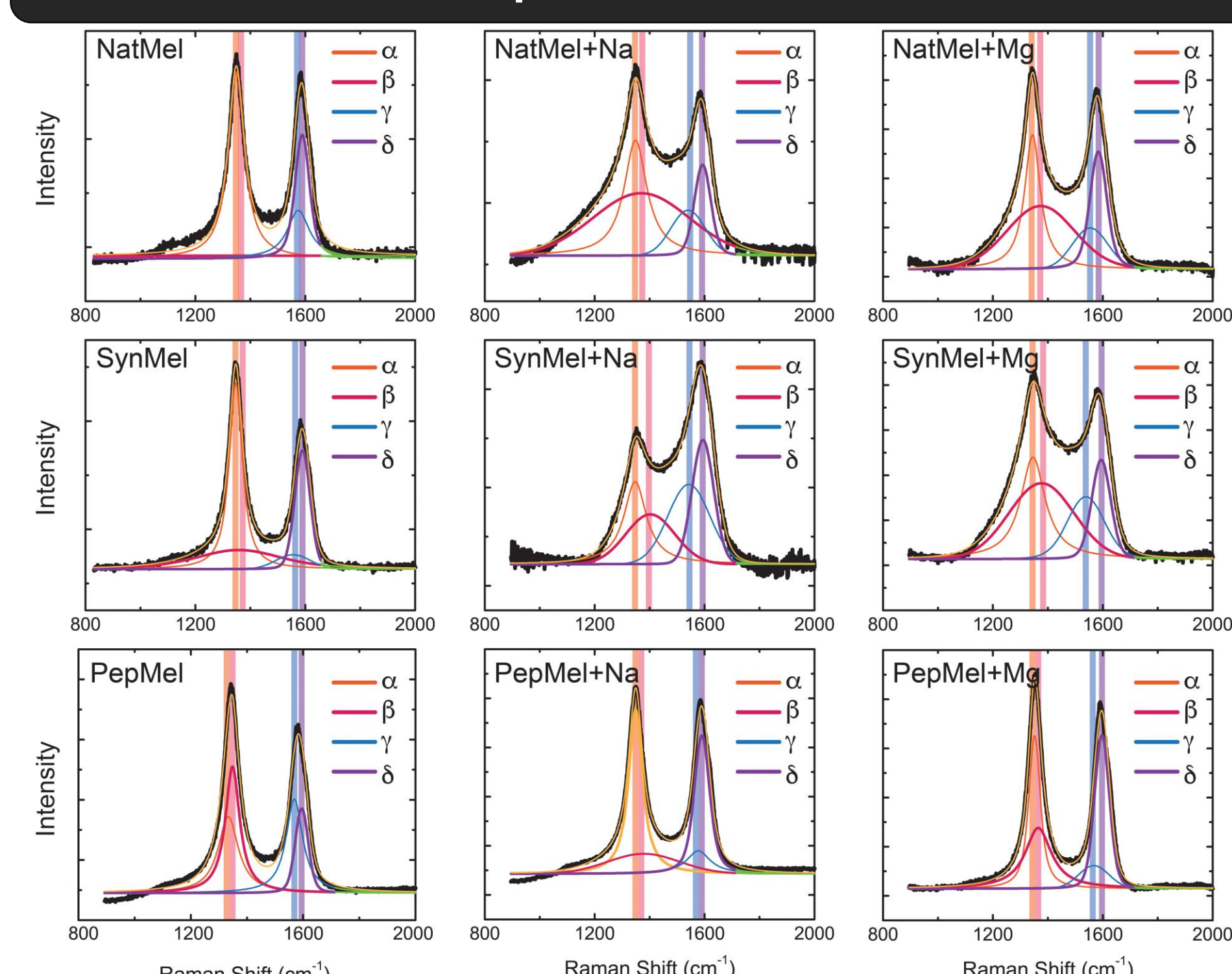
Electrochemical characterization



Chronoamperometry by constant V



Raman spectra of melanins



Structural conformation via Raman spectroscopic analysis

