

Surface photovoltage studies of ZnO microcrystals in relation to their antibacterial action

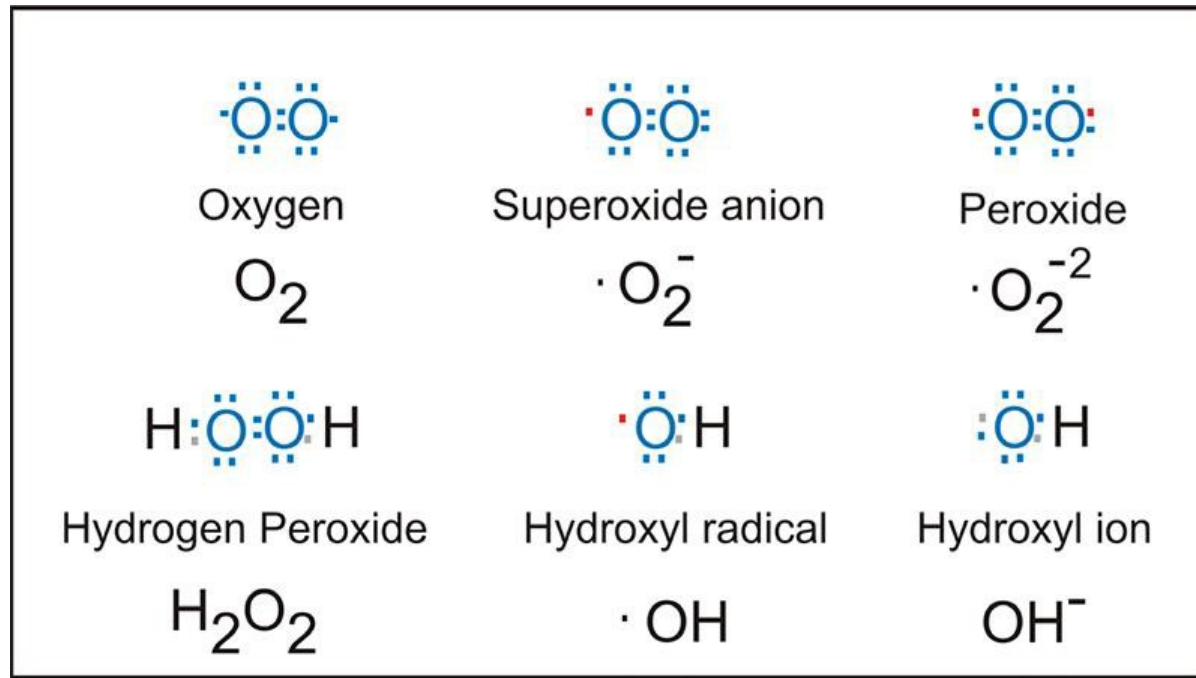
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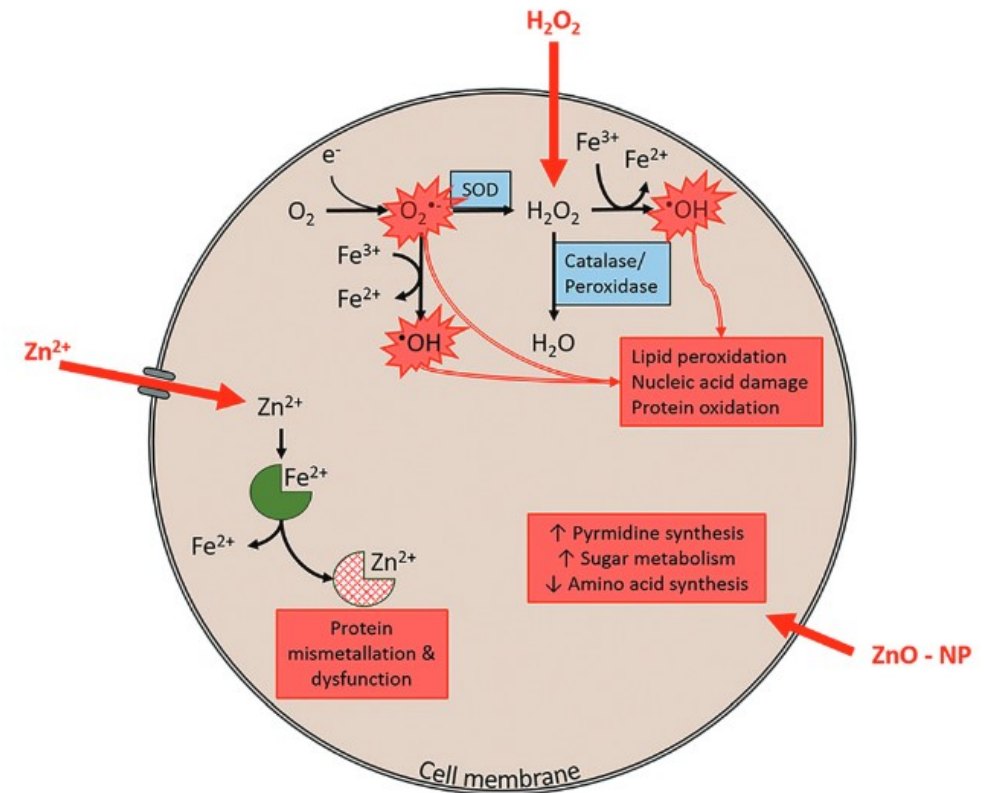
Multiple proposed mechanisms

- Production of reactive oxygen species (ROS)



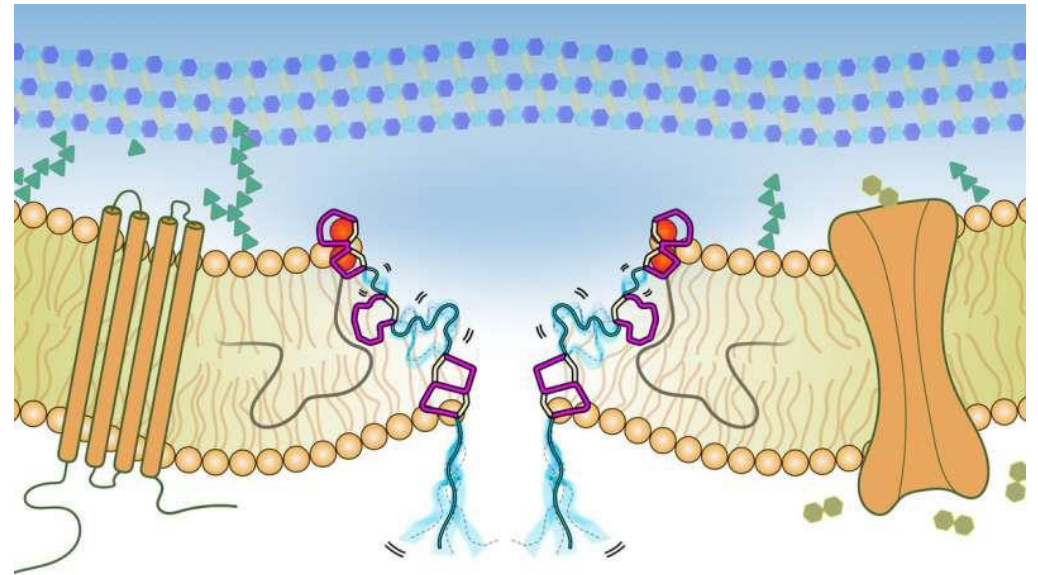
Multiple proposed mechanisms

- Production of reactive oxygen species (ROS)
- Metal ion release and Enzyme Inhibition



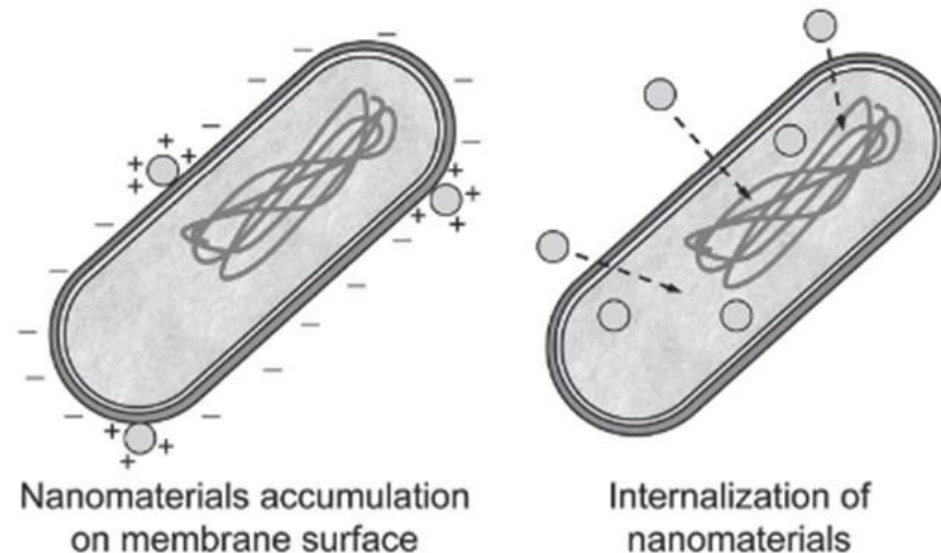
Multiple proposed mechanisms

- Production of reactive oxygen species (ROS)
- Metal ion release and enzyme inhibition
- Physical damage to cell wall

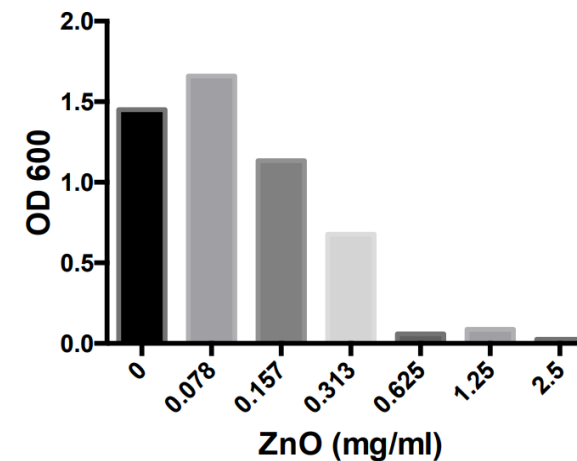
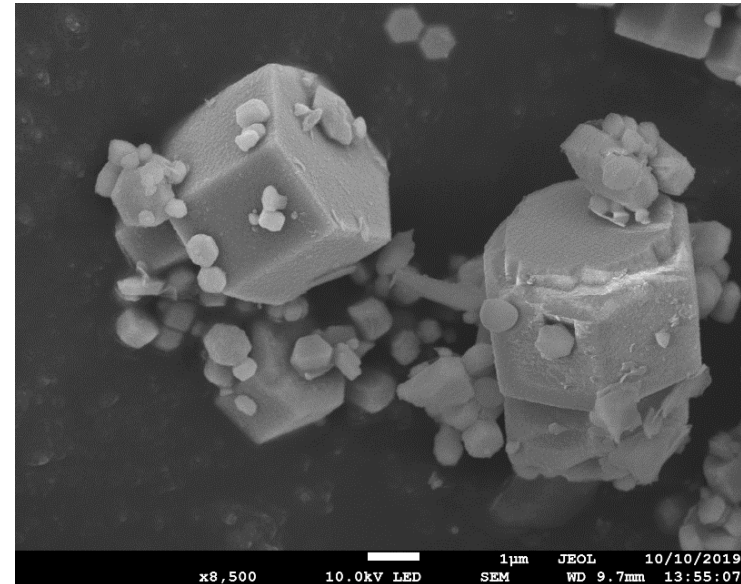
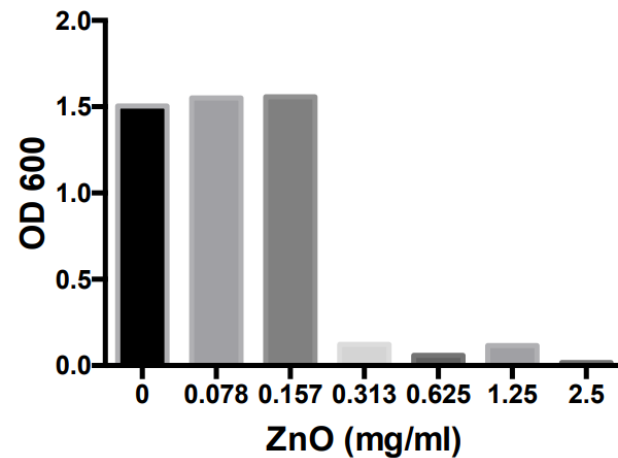
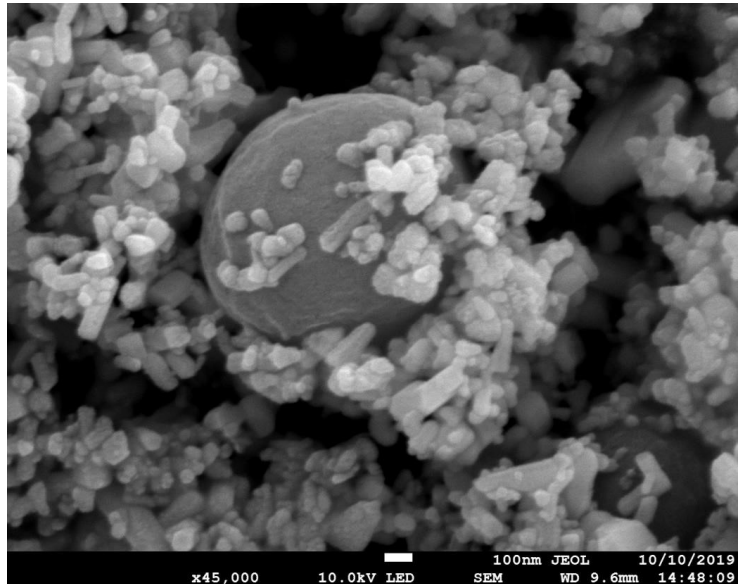


Multiple proposed mechanisms

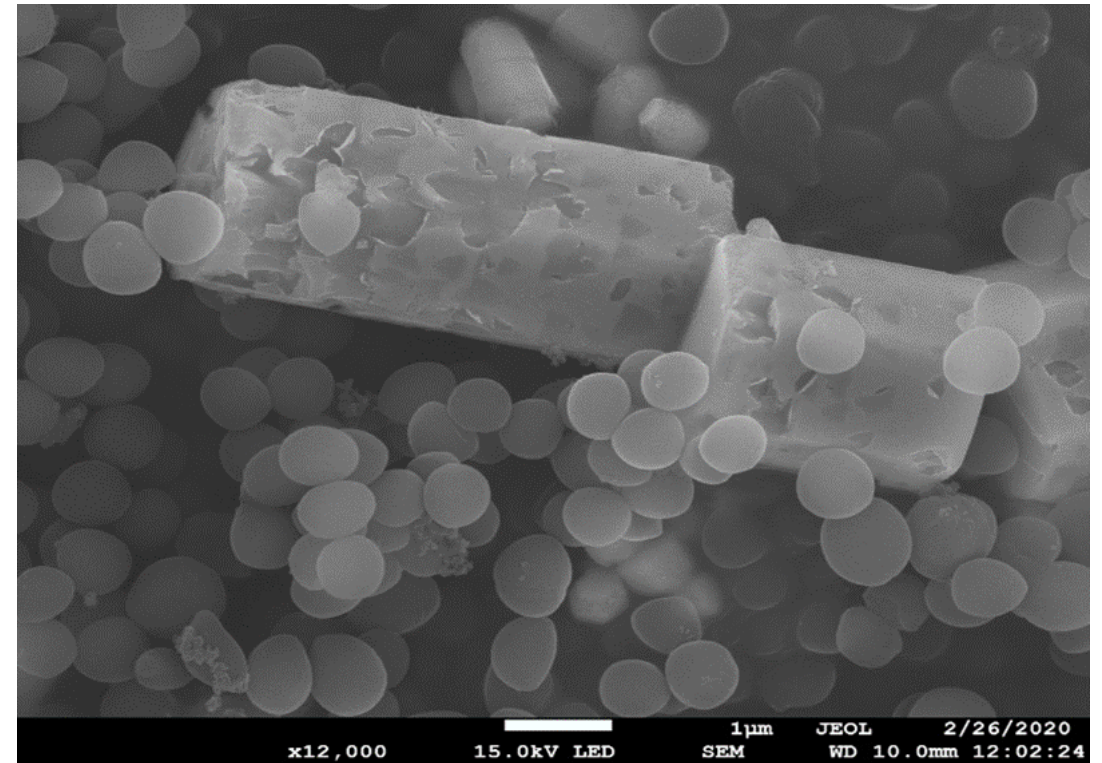
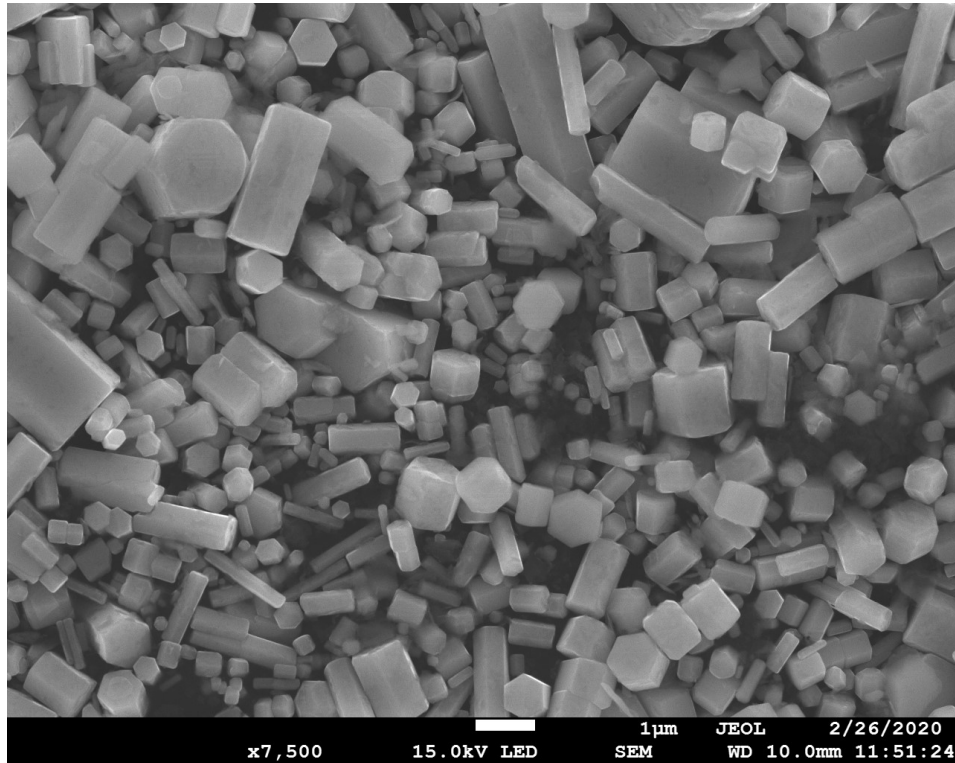
- Production of reactive oxygen species (ROS)
- Metal ion release and enzyme inhibition
- Physical damage to cell wall
- Internalization of Nanoparticles



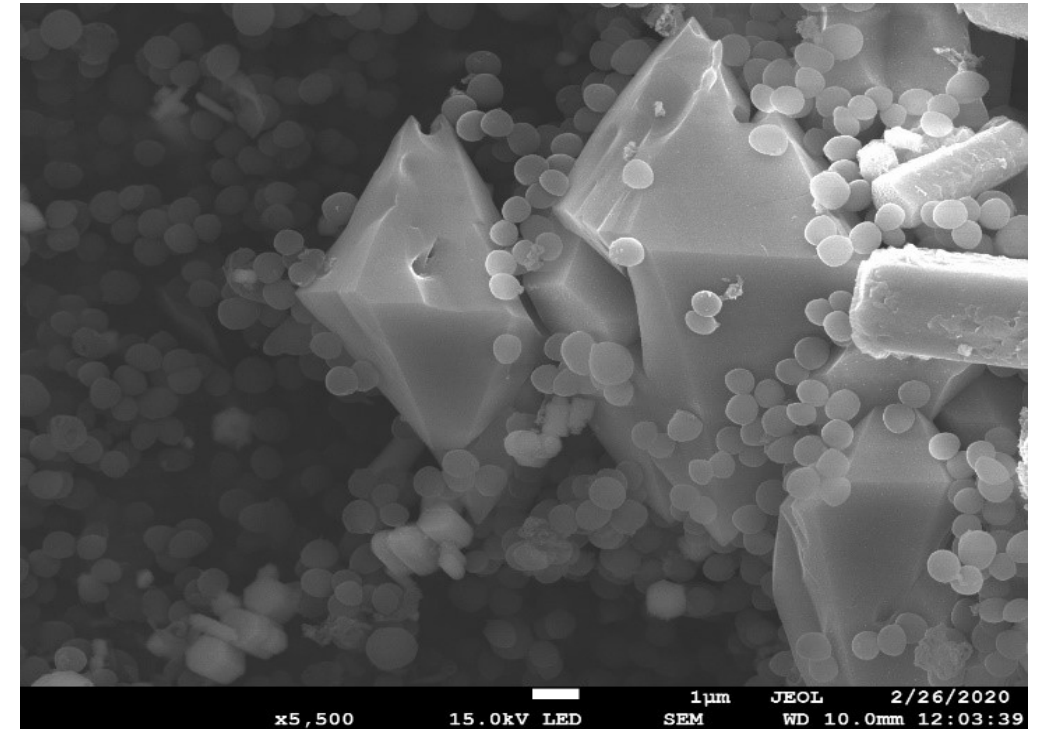
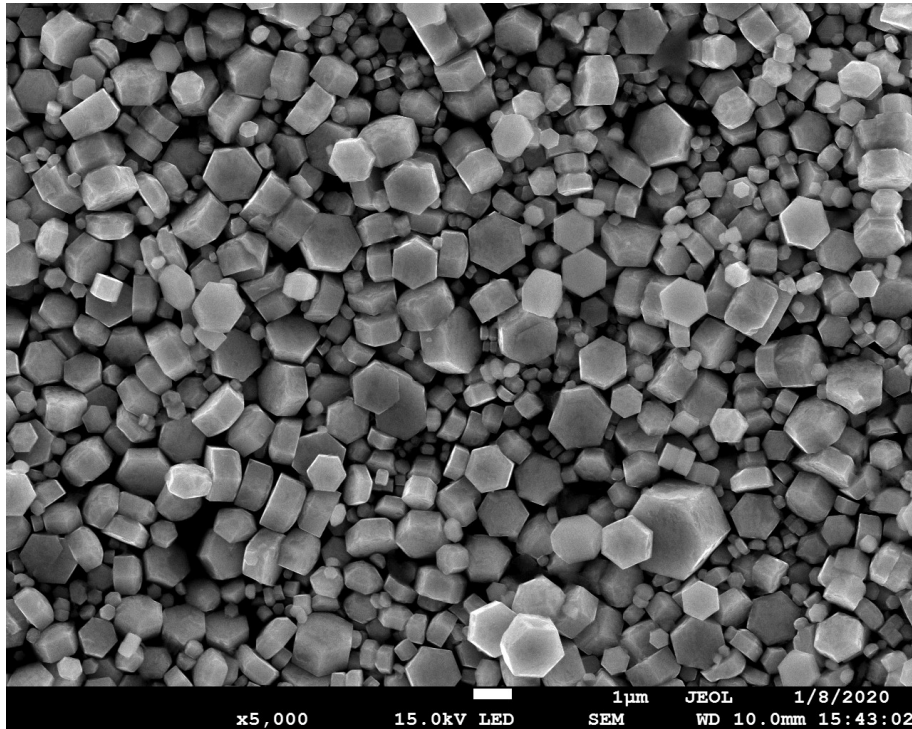
Inhibition of larger particles comparable to nanoscale particles



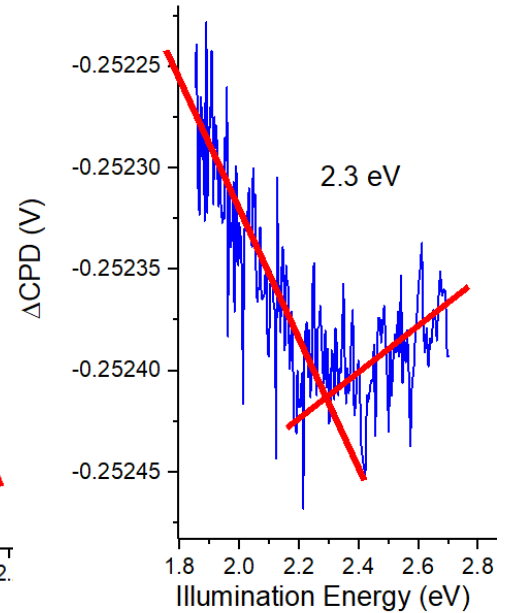
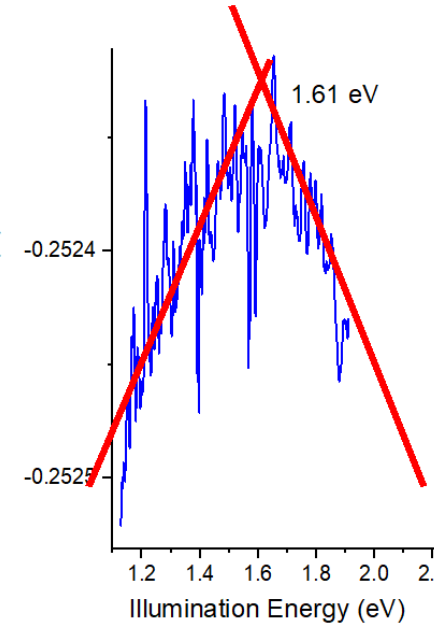
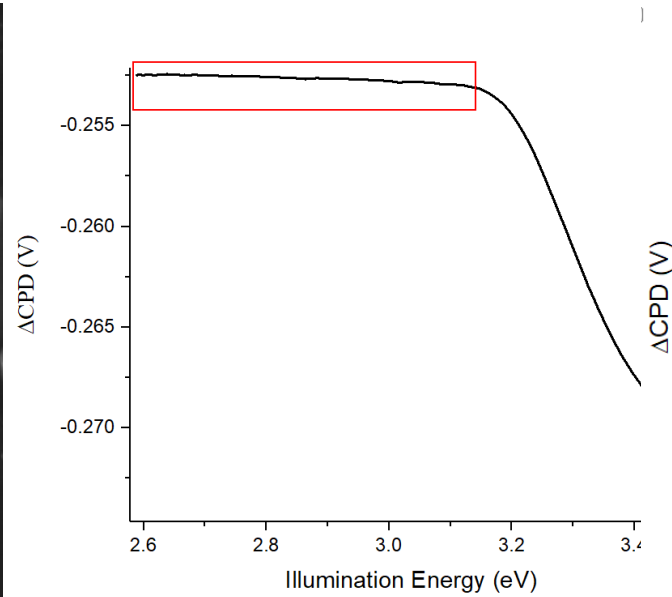
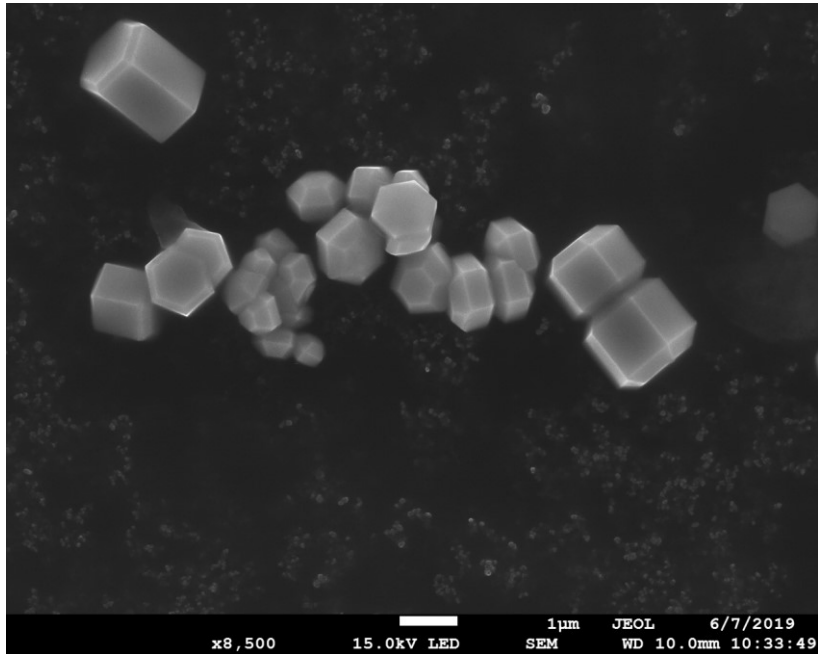
Observation of surface-surface interactions



Observation of surface-surface interactions



Measuring surface charge dynamics



Questions?