ANALYTICAL SEMINAR

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"A New Paradigm in Electrochemiluminescence Microscopy: Separating the 'E' from the 'CL'"

Electrochemiluminescence (ECL) is a light-emission phenomenon that comes from simple reduction-oxidation reactions at an electrode surface. When these reactions are coupled to optical microscopy, surprising chemistries can be visualized. In our work, we use immiscible liquid|liquid interfaces along with high concentrations of reagents to promote, sometimes explosively, chemical reactivity and phase-transfer reactions. Our pursuits have led to the discovery of the electroprecipitation of highly reactive radical intermediates. This talk will be a bird's eye overview on the direction and trajectory of this avenue of inquiry. Beginning from the original studies mapping the multiphase environment on an electrified interface to the most recent studies where we use electroprecipitation reactions to expand electrochemiluminescence time beyond the time when the voltage is applied.

Scan to read sample ECL papers by Brady and other members of the Jeffrey Dick Research Group

Acc. Chem. Res.

Precipitate ECL

Droplet ECL

PURDUE UNIVERSITY | James Tarpo Jr. and Margaret Tarpo Department of Chemistry

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