

Materials Science Colloquia 2022-23

A story of molecular electronics and no Moore: The search for structure property relationships in molecular junctions

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Thursday, 26 May 2022, 16:45 - 17:45 (online)

Abstract

The field of molecular electronics has advanced rapidly with the development of convenient laboratory methods for the construction of electrode | molecule | electrode molecular junctions and the use of these devices in the measurement of through-molecule conductance. This presentation will summarise some of our recent work with conjugated molecular compounds such as polyynes, para- and meta-diethynyl benzenes, and metal complexes in molecular junctions and describe our efforts to develop structure-property relationships that will inform molecular designs for molecular electronics.

About the speaker Paul J Low is a synthetic chemist, interested in the synthesis and reactivity profiles of metal complexes containing all-carbon and carbon-rich ligands, intramolecular electron-transfer processes in mixed-valence complexes and molecule-mediated charge transport.