



演題：**Redox-Active and AIE-Active Functional Materials for Optoelectronic Applications**

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Abstract: This article describes the recent development of triphenylamine (TPA)-based advanced materials for various optoelectronic applications, such as electrochromic (EC), electrofluorochromic (EFC), and polymeric memory devices. We herein systemically discuss the structural design, optical and electrical properties of different TPA-containing high-performance polymers (HPPs) that will be beneficial for polymer chemists and scientific community to have deeper and broader understanding of the recent developments and further prompt the engineering and conceptual design of materials for a number of emerging applications (data storage, displays, and flexible electronics). Thus, a majority of the recent works in our laboratory involving the synthesis and property evaluation of functional HPPs as well as their structural design by using the respective novel TPA-based monomers will be included in this talk as the application of AIE-active PL luminescent and EC materials with interesting color transitions, good EC reversibility in the visible region or NIR range, EFC (so called electrochemically photo-switching) and photoinduced transistor memory devices. The relation between structures and properties of the resulted functional high-performance polymers will be presented in terms of their functionality.

References:

- 1) H. J. Yen, G. S. Liou, Design and Preparation of Triphenylamine-based Polymeric Materials Towards Emergent Optoelectronic Applications. *Prog. in Polym. Sci.*, 2019, **89**, 250-287.
- 2) H. T. Lin, C. L. Huang, G. S. Liou, Design, Synthesis and Electrofluorochromism of New Triphenylamine Derivatives with AIE-Active Pendant Groups. *ACS Appl. Mater. Interfaces*, 2019, **11**, 11684-11690.

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