ALTERNATING COPOLYMERS AS A NOVEL CLASS OF THROUGH-SPACE CHARGE TRANSFER TADF EMITTERS

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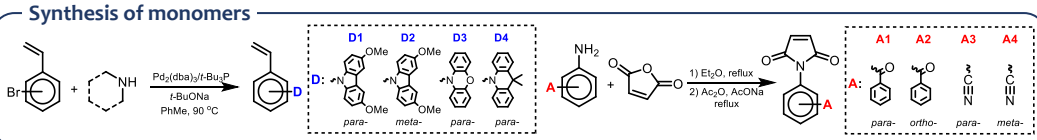
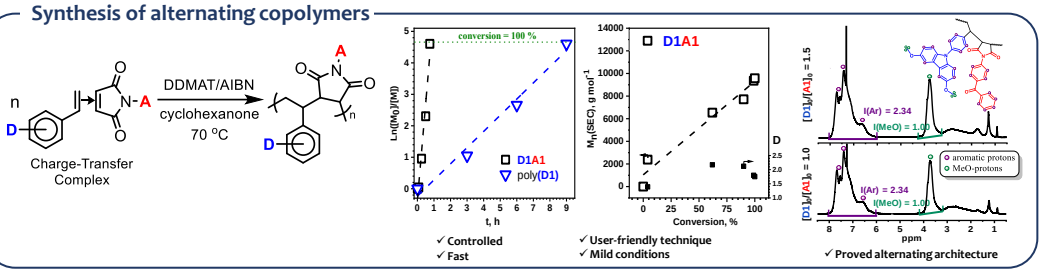
INTRODUCTION

Recent advancements in the field of emissive materials for OLEDs have been characterized by two main trends. Firstly, there has been a notable inclination toward the thermally activated delayed fluorescence (TADF) mechanism of electroluminescence, a phenomenon that facilitates the attainment of high quantum yields without the necessity of using heavy metals. Secondly, there has been a transition from low-molecular-weight emitters to polymers, a shift that significantly streamlines the OLED manufacturing process by enabling the utilization of "wet" methods (spin-coating, inkjet printing, etc.) instead of expensive vacuum deposition. In addition, polymeric emitters are characterized by much higher morphological and thermal stability than organic TADF materials that allows devices based on them to be exploited longer.[1]

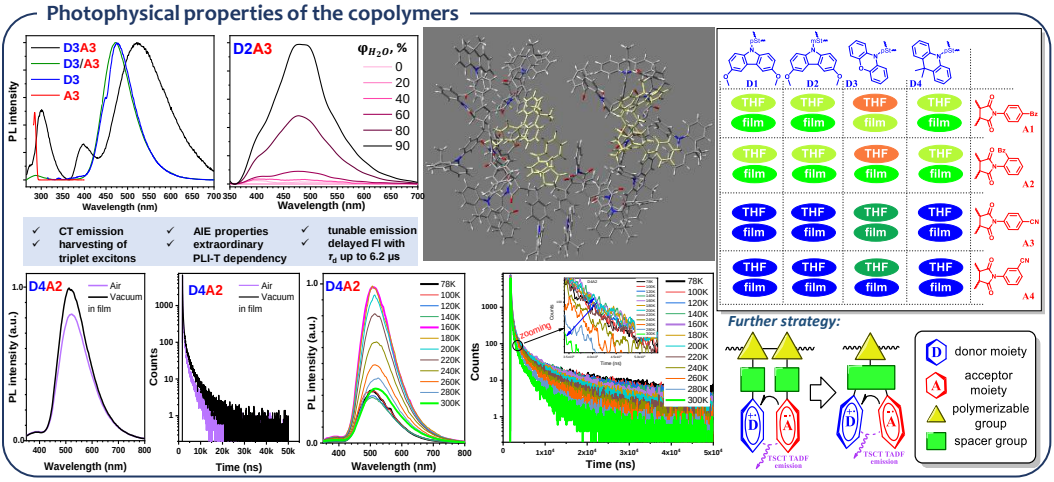
Synthesis of monomers



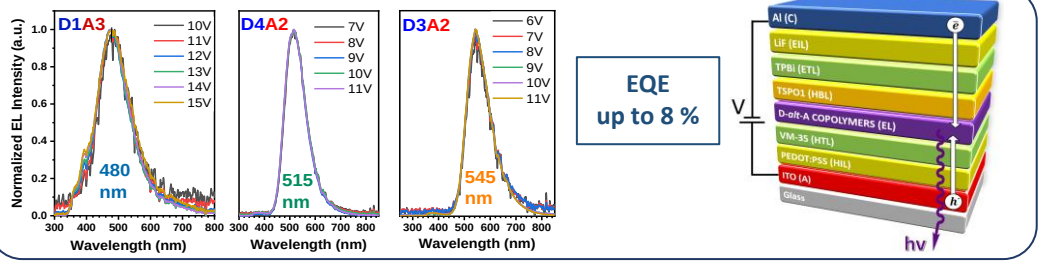
Synthesis of alternating copolymers



Photophysical properties of the copolymers



OLED devices



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References

1 - our papers dedicated to the topic -