

Synthesis of π -Conjugated Oligomers Empowered by Sustainable Chemistry: Utilizing the Potential of Kolliphor® EL as an Eco-Friendly Emulsifier

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Synthesizing π -conjugated oligomers with optical properties for optoelectronic devices remains a top priority, as the demand for new electronic devices continues to grow. By incorporating chiral materials into OLEDs, it is possible to achieve direct circularly polarized light (CPL) emission, which enhances device performance by improving external quantum efficiency and thus reducing energy loss.

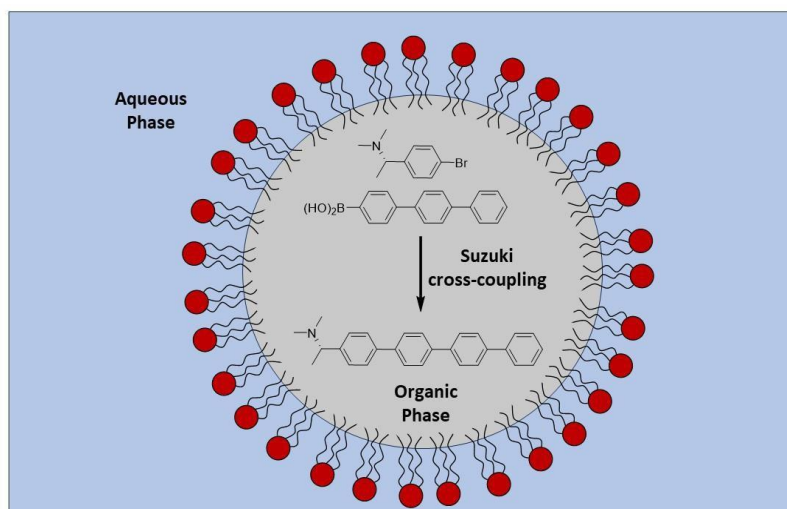


Figure 1: Schematic Representation of Micelle-Encapsulated Suzuki Cross-Coupling Reaction.

Utilizing non-ionic surfactants enhances yield, lowers reaction temperature, and shortens reaction time by promoting micelle formation, thereby reducing organic solvent usage. The long-term objective is to incorporate eco-friendly methods in the synthesis process and to develop innovative oligomers with exceptional electronic properties.

References:

- [1] M. Rooney, S. Mattiello, R. Stara, A. Sanzone, P. Brazzo, M. Sassi, L. Beverina, *Dyes and Pigments* **2018**, 149, 893-901.