

Polytriarylamines with on-chain crystal violet moieties

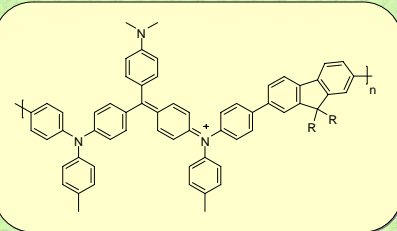


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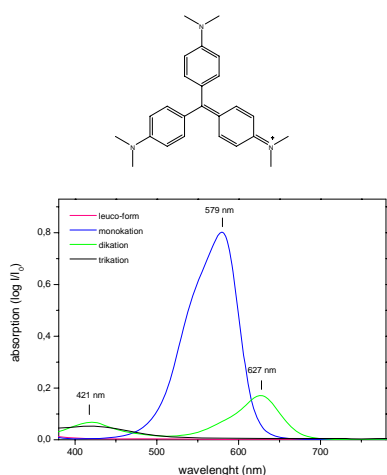
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Introduction

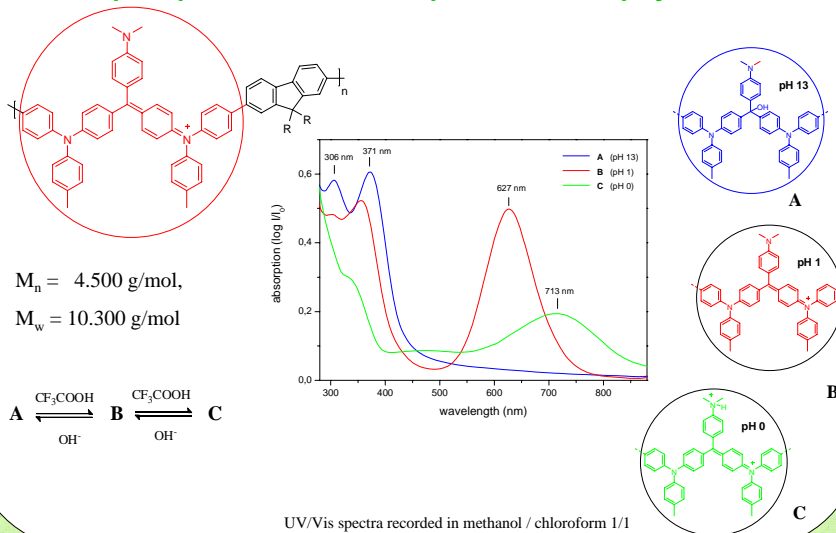
Polytriarylamines (PTAAs) are an interesting class of amorphous, p-type organic semiconductors for OFET applications. Therefore, we started to develop novel PTAAs with on-chain crystal violet moieties with a high sensitivity of the optical properties on the pH value.



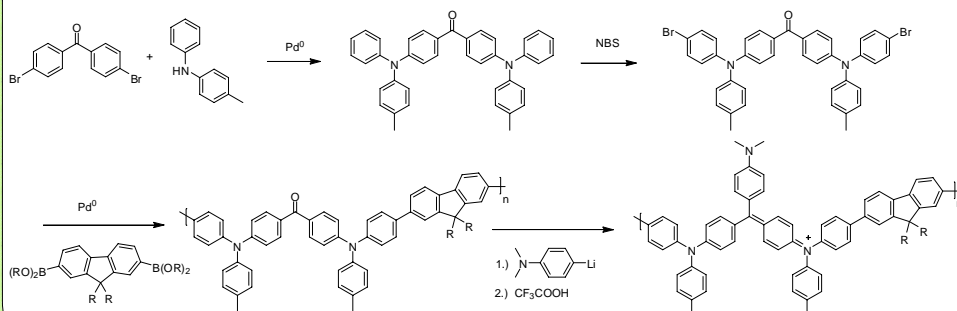
UV/Vis-spectrum of crystal violet



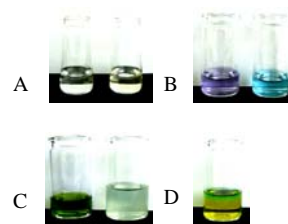
pH-Dependence and UV/Vis-spectrum of the copolymer



Synthesis



Solutions of crystal violet (left) and the corresponding copolymer (right)



A: leucoform
B: monocationic species
C: dicationic species
D: tricationic species (only for crystal violet)

Conclusion

Related to the incorporated crystal violet moieties the resulting copolymer shows the expected pH-dependence of its UV/Vis-spectrum. In basic media it exists in the colorless leuco-form **A**. Ongoing protonation first generates the monocation **B** and then the corresponding dicationic species **C** of the copolymer. The potential for OFET application will be investigated.

References