

学位論文要約

題目 Designed Functions of Supramolecular Organizations Formed via Self-Assembly of Diphenyl Isoxazole Derivatives in Solution and in the Solid State

(ジフェニルイソキサゾール誘導体の自己集合により形成される超分子組織体の溶液および固体状態における新機能)

氏名 小野 雄大

Content of the thesis

Chapter 1 General Introduction

- 1.1 Supramolecular Polymer Chemistry of π -Conjugated Planar Molecules
- 1.2 Mechanistic Insights into Cooperative Supramolecular Polymerization of π -Conjugated Planar Molecules
- 1.3 Role of Diphenyl Isoxazole Derivatives in Supramolecular Polymers
- 1.4 Overview of the Present Thesis
- 1.5 References

Chapter 2 Positive Chiral Non-Linear Effect in Supramolecular Polymerization of Carbazole-Cored Phenyl Isoxazolyl Benzenes

- 2.1 Introduction
- 2.2 Synthesis and Self-Assembly of (*S*)- and (*R*)-1
- 2.3 Conclusion
- 2.4 Experimental Section
- 2.5 References

Chapter 3 Self-Assembly of Tris(phenylisoxazolyl)benzene Hydrogen-Bonded Dimer

- 3.1 Introduction
- 3.2 Synthesis and Self-Assembly of (*S*)- and (*R*)-4 Homochiral Solutions
- 3.3 Conclusion
- 3.4 Experimental Section
- 3.5 References

Chapter 4 Negative Chiral Non-Linear Effect in Supramolecular Polymerization of Tris(phenylisoxazolyl)benzene Hydrogen-Bonded Dimer

- 4.1 Introduction
- 4.2 Coassembly of (*S*)- and (*R*)-4 mixtures
- 4.3 Negative nonlinear dependence in a coassembly process of (*S*)- and (*R*)-4 mixture
- 4.4 Conclusion
- 4.5 Experimental Section
- 4.6 References

Chapter 5 Columnar Organization of [5]helicene in a Crystalline State

5.1 Introduction

5.2 Synthesis and Single-Crystal Structure of [5]helicene **15**

5.3 Conclusion

5.4 Experimental Section

5.5 References

Chapter 6 Controlled Helicities in Supramolecular Polymerization of [5]helicene Possessing Tris(phenylisoxazolyl)benzene

6.1 Introduction

6.2 Synthesis and Self-Assembling Behavior of (*S*)-**18**

6.3 Conclusion

6.4 Experimental Section

6.5 References

Chapter 7 Latent Porosity and Selective Molecular Adsorption in Molecular Crystal of Tris(phenylisoxazolyl)benzene

7.1 Introduction

7.2 Single crystal structure of $\text{CHCl}_3@22$

7.3 Single crystal structure of decalin@22

7.4 Selectivity in guest encapsulation.

7.5 Conclusion

7.6 Experimental Section

7.7 References

Acknowledgement