

Full Papers

羧酸铜与单螺旋吡啶胺配体自组装的两种新型超分子配合物

周利君,王萃娟,王尧宇\*,刘萍,周彩华,史启祯

西北大学化学系,陕西省物理无机化学重点实验室,中国西安710069

收稿日期 2005-6-3 修回日期 2005-11-2 网络版发布日期 接受日期

**摘要** 两种新型超分子配合物[Cu(bpapa)(dhbd)]·CH<sub>3</sub>OH (1)和[Cu(bpapa)(ma)]·ma (2) (bpapa=双-[6-(2-吡啶氨基)吡啶-2-吡啶]胺, dhbd=2,3-二羟基丁二酸二阴离子, ma=α-甲基丙烯酸阴离子)被成功地设计合成,并通过X射线单晶衍射、红外光谱、电子光谱、热重分析等技术对其进行了表征。配合物1是第一例基于羟基多元酸构筑的寡-α-吡啶胺类配合物,通过氢键、芳香环的π-π堆积作用形成了含一维梯状双链结构、具有开放式隧道的三维蜂窝状超分子网。配合物2也是通过超分子作用力相互识别形成二聚的超分子合成子,构筑一维超分子链,进一步扩展为二维超分子网。在这两个配合物中,螯合的单螺旋配体bpapa均采用all-*anti*构型。对两个配合物同时进行了密度泛函(DFT)计算。

**关键词** [单螺旋吡啶胺](#),[羧酸铜盐](#),[超分子配合物](#)

分类号

### Supramolecular Complexes Self-assembled by Copper(II) Carboxylate and Monohelical Pyridylamino Ligand

ZHOU Li-Jun, WANG Cui-Juan, WANG Yao-Yu\*, LIU Ping, ZHOU Cai-Hua, SHI Qi-Zhen

Shaanxi Key Laboratory of Physico-inorganic Chemistry, Department of Chemistry, Northwest University, Xi'an, Shaanxi 710069, China

**Abstract** Two novel supramolecular complexes [Cu(bpapa)(dhbd)]·CH<sub>3</sub>OH (1) and [Cu(bpapa)(ma)]·ma (2) (bpapa = bis[6-(2-pyridylamino)pyrid-2-yl]amine, dhbd = 2,3-dihydroxybutanedioate dianion, ma = α-methacrylate) were rationally designed, synthesized and characterized by single crystal X-ray diffraction, IR, electronic spectroscopy and thermogravimetric analyses. Complex 1 was the first oligo-α-pyridylamino complex based on hydroxypolycarboxylate and self-assembled into a 3D honeycomb configuration network with open channels and tubes containing 1D ladder-shaped double chains formed by hydrogen bonds and aromatic π-π stacking interactions. Complex 2 constructed a 2D supramolecular network extended by 1D chains from dimeric supramolecular synthon through noncovalent supramolecular interactions. In the two complexes, the chelating monohelical ligand adopted all-*anti* configuration. Density functional theory calculations were applied to 1 and 2.

**Key words** [monohelical pyridylamino](#) [copper\(II\) carboxylate](#) [supramolecular complex](#)

DOI:

通讯作者 王尧宇 [wyaoyu@nwu.edu.cn](mailto:wyaoyu@nwu.edu.cn)

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(0KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“单螺旋吡啶胺,羧酸铜盐,超分子配合物”的相关文章](#)

▶ 本文作者相关文章

- [周利君](#)
- [王萃娟](#)
- [王尧宇](#)
- [刘萍](#)
- [周彩华](#)
- [史启祯](#)