

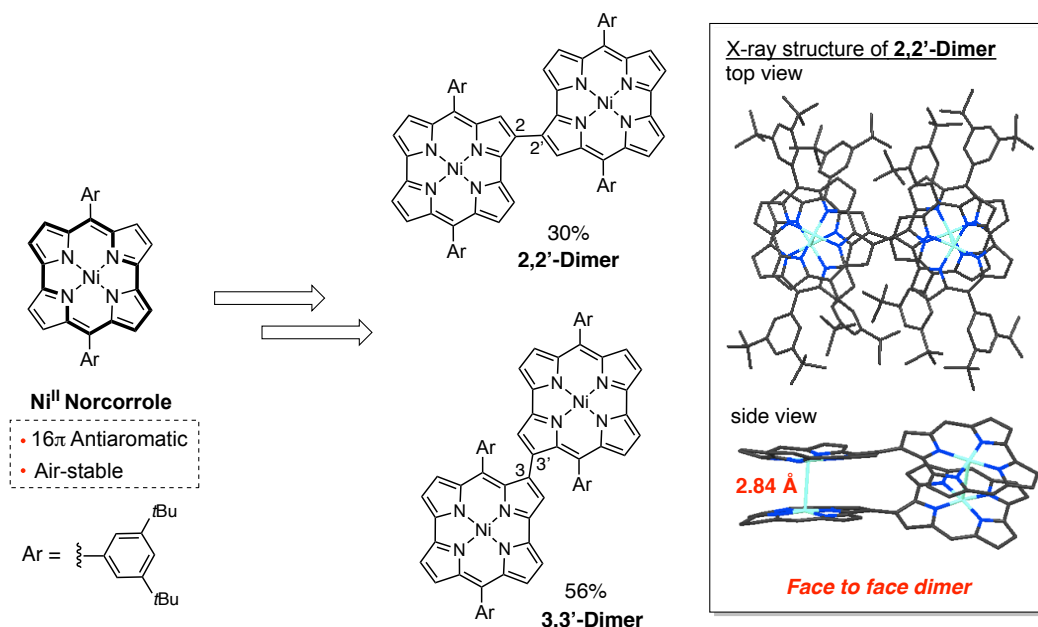
Synthesis of Covalently Linked Norcorrole Dimers and Their Association Behavior

(Graduate School of Engineering, Nagoya University) ○Si-Yu Liu, Hiroyuki Kawashima, Norihito Fukui, Hiroshi Shinokubo

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The use of π - π stacking between aromatic π -systems is an important guideline to design supramolecular assemblies because such assemblies are useful for the development of novel electronic and optoelectronic materials.¹ However, the interplanar distances between conventional π - π stacking are usually longer than that the sum of van der Waals radii of two carbon atoms (3.4 Å). In addition, the electronic repulsion among π -electrons usually results in an offset or slipped π -stacking rather than perfect face-to-face alignment. These structural features are not suitable for the effective intermolecular electronic interaction.

In 2016, our group reported that norcorrole, an antiaromatic porphyrinoid, tends to form a face-to-face dimer with a remarkably short interplanar distance (3.05 Å).² Such a close stacking is attributed to strong frontier orbital interactions between the antiaromatic cores. In this work, we synthesized several covalently linked norcorrole dimers. These molecules spontaneously assembled to form molecular architectures with effective electronic interactions. In this presentation, we will discuss the structures of these supramolecular assemblies.



- 1) N. Martin *et al.* *Chem. Soc. Rev.* **2015**, 44, 6425.
- 2) H. Shinokubo *et al.* *Nat. Commun.* **2016**, 7, 13620.