

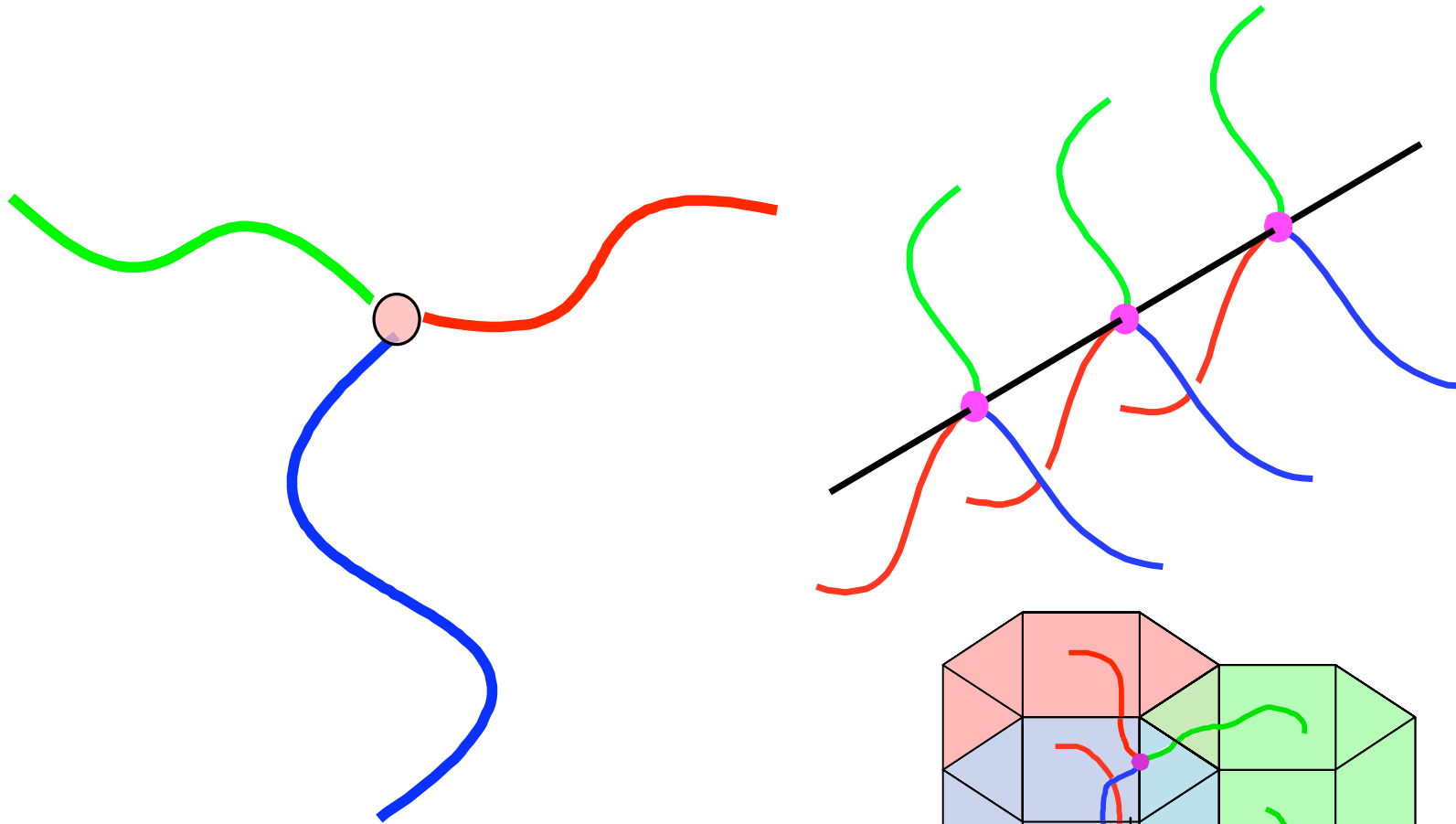
KEK/IMASS symposium, Oct.16, 2008

New Self-Assembled Structures from Highly Complex Polymeric Systems

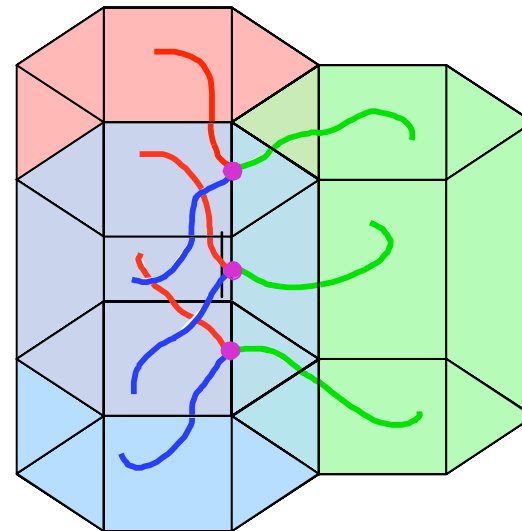
Yushu Matsushita

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Nagoya 464-8603, Japan

II Star-shaped molecules of the ABC type

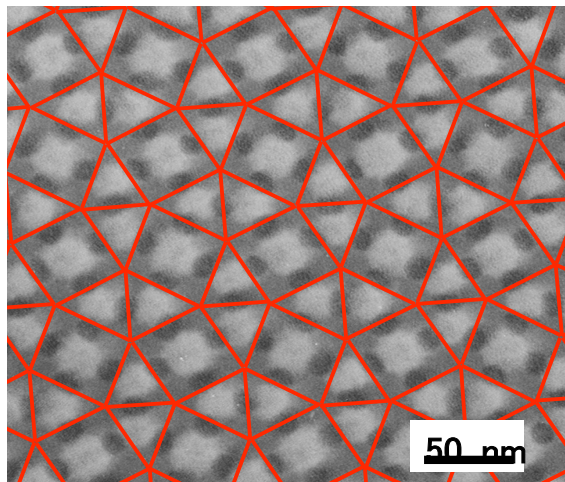


packing manner of cylinders
→ two-dimensional tiling pattern

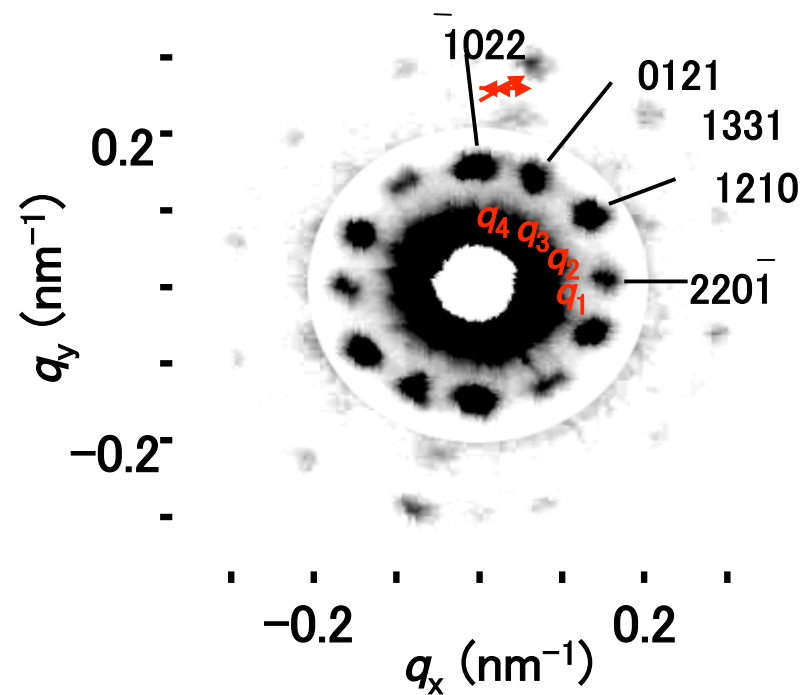
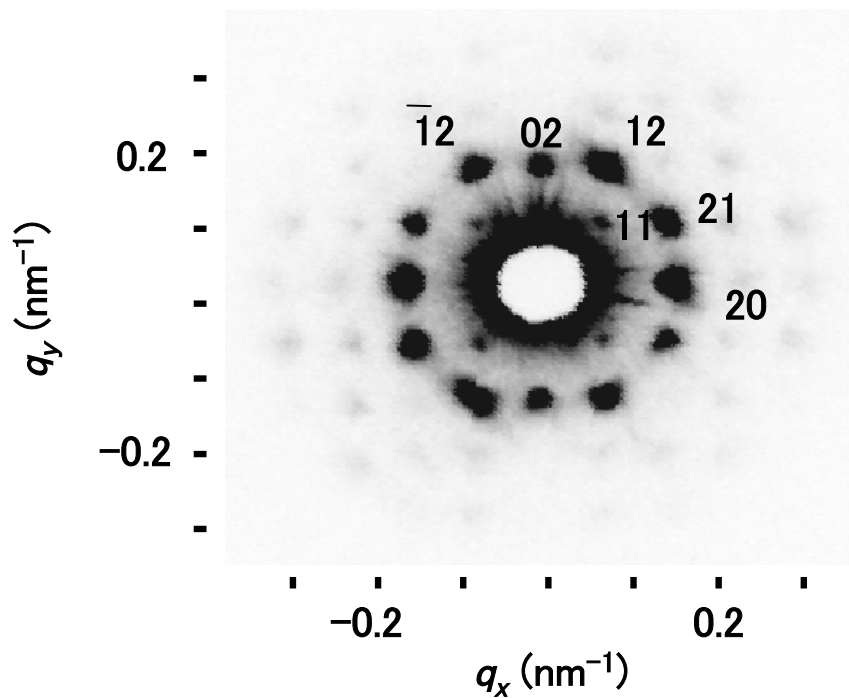
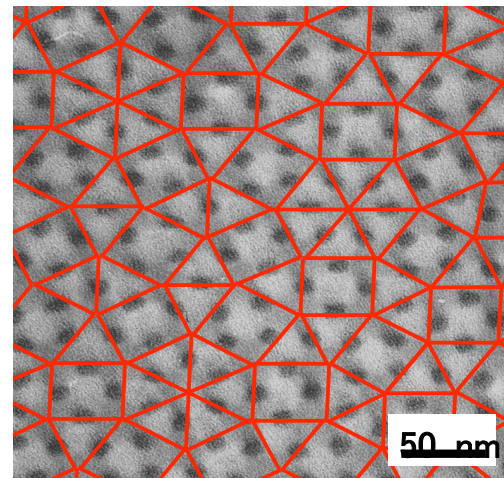


Archimedean Tiling and Quasicrystalline Tiling

$I_{1.0}S_{2.3}P_{2.0}$ (3.3.4.3.4)

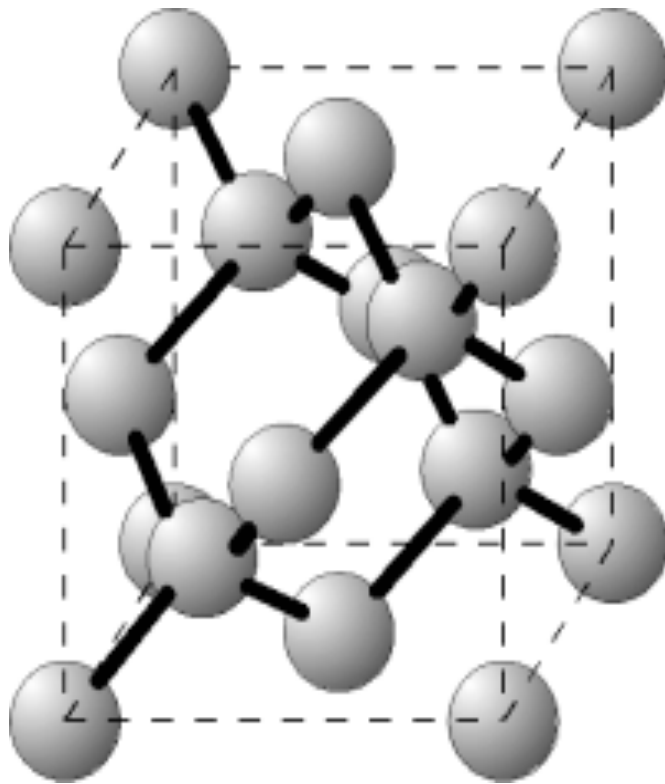


$I_{1.0}S_{2.7}P_{2.5}$ (QC tiling)

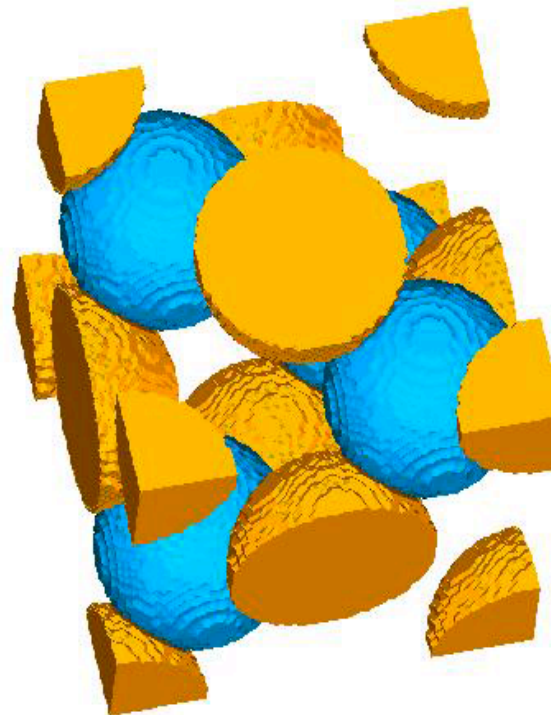


New Network Structure from ABC-Star

Triply Periodic Diamond Network Structure

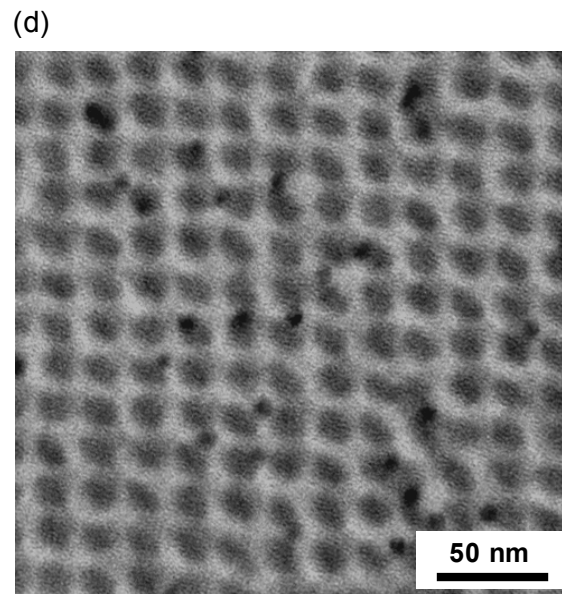
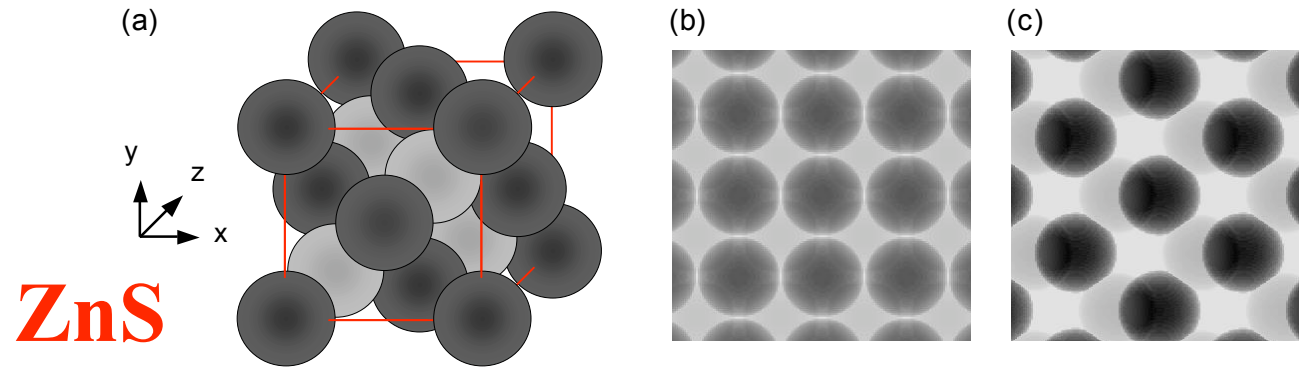


Diamond

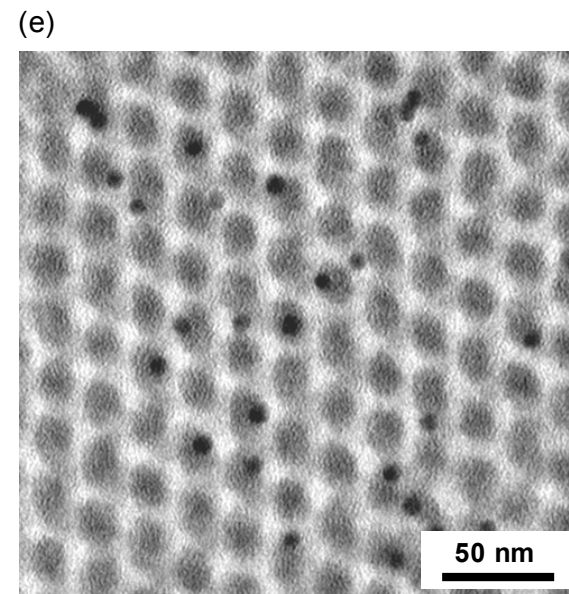


ZnS(Zincblende)

Zinc Blende(ZnS) Structure from ABC-Star



(001)



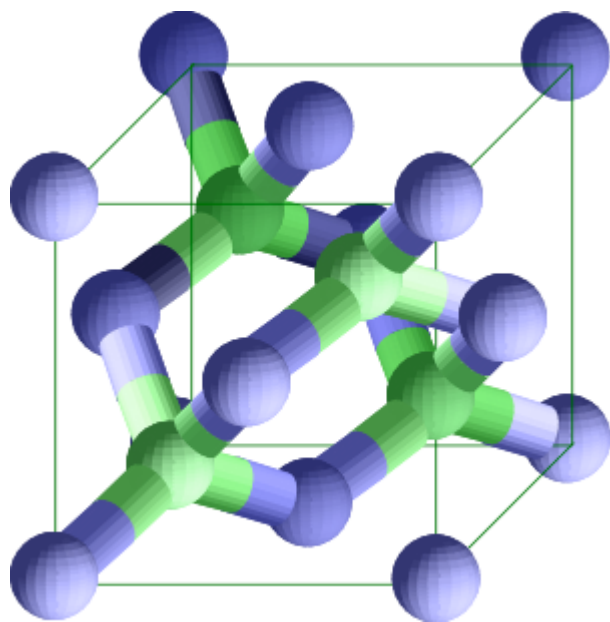
(011)

45 degree rotation

Future work :example 1

Application of supramolecular chemistry to complex polymer system

Formation of three-dimensional
nanonetwork frame



Creation of polymer/metal
hybrid
→neutron/X-ray analyses

