

# Makoto Fujita & The Crystal Sponge

## X-ray analysis on the nanogram to microgram scale using porous complexes

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### ■ Makoto Fujita

- ◆ B.S. – Chiba University (1980)
- ◆ M. S. – Chiba University (1982)
  - Katsuyuki Ogura: dithiane sulfoxides
- ◆ Ph.D. – Tokyo Institute of Technology / Sagami Chemical Research Center (1987)
  - Tamejiro Hiyama: silane chem., polyhalocarbon synthesis
- ◆ Chiba University (1988-1997)
- ◆ Nat.I Inst. Of Natural Sciences (1997-1999)
- ◆ Nagoya University (1999-2002)
- ◆ Tokyo University (2002-present)

synthetic methodology,  
supramolecular  
chemistry / recognition

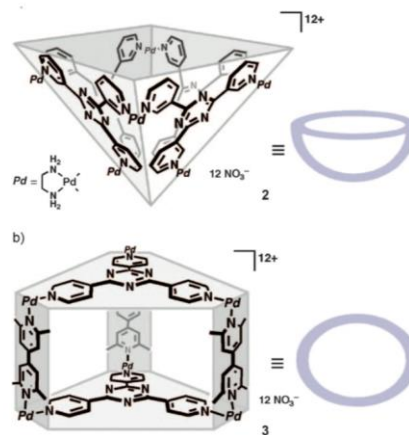
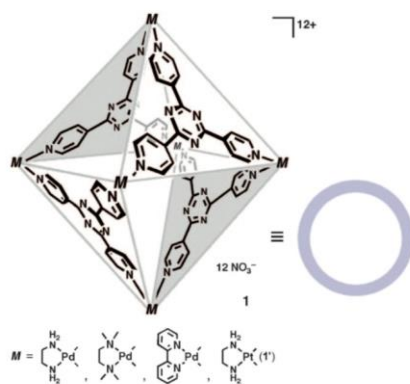


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### ■ Background



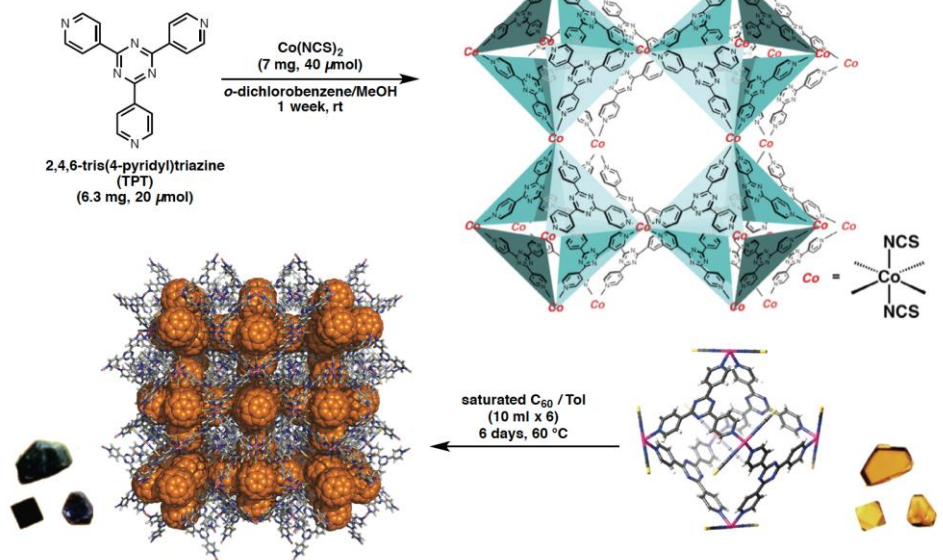
Yoshizawa, M.; Klosterman, J.K.; Fujita, M. *Angew. Chem. Int. Ed.* **2009**, *48*, 3418–3438.

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### ■ The Crystalline Sponge: Co-based



Inokuma, Y.; Arai, T.; Fujita, M. *Nature Chem.* 2010, 2, 780–783.

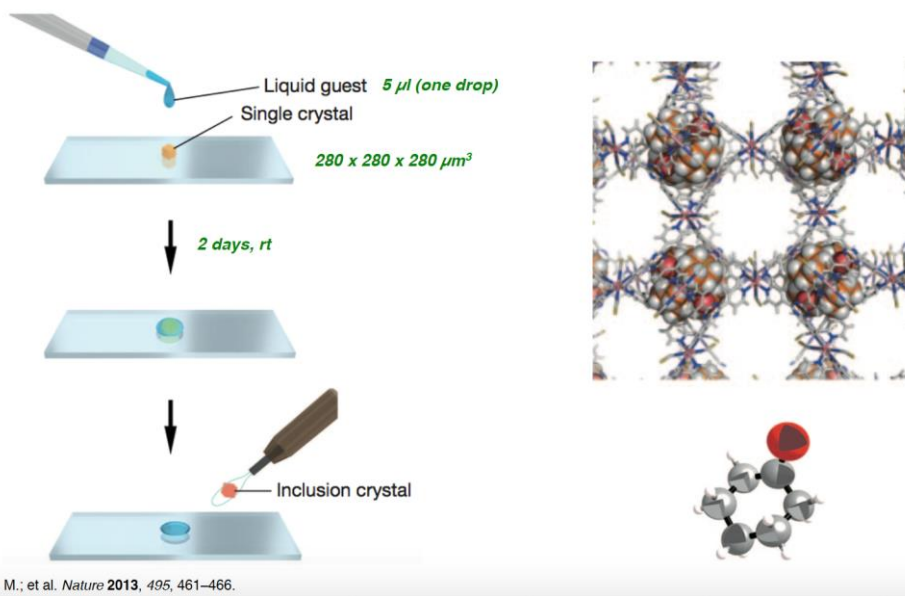
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### ■ General application to crystallography

- ◆ Crystal structure of a liquid substance: cyclohexanone in [Co]



Fujita, M.; et al. *Nature* 2013, 495, 461–466.

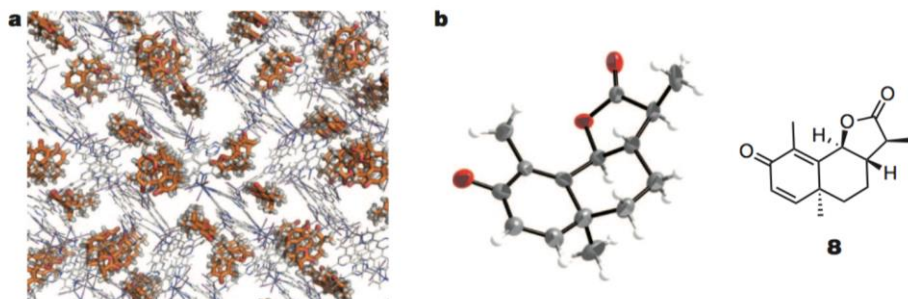
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■ General application to crystallography

- ◆ Assignment of absolute configuration: santonin



Fujita, M.; et al. *Nature* **2013**, *495*, 461–466.

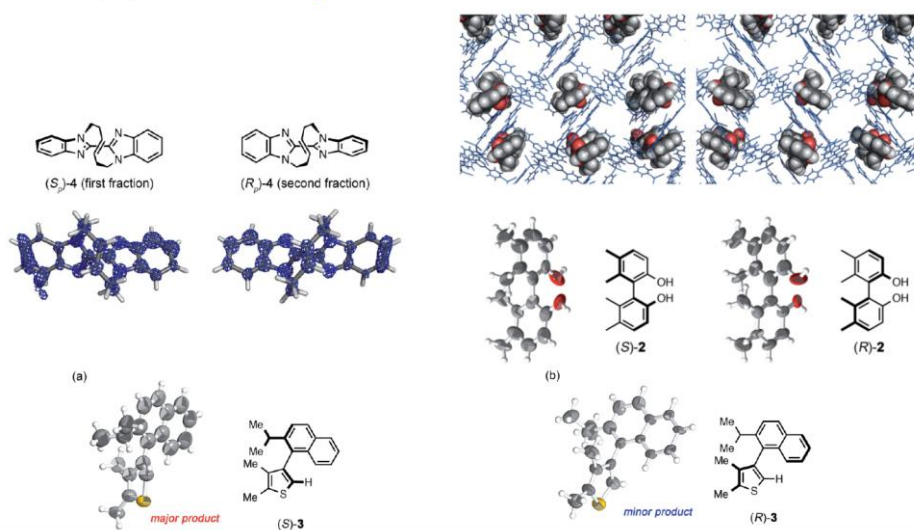
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■ Further Examples

- ◆ Fujita (2015): absolute configuration determination



Fujita, M.; et al. *Chem. Sci.* **2015**, *6*, 3765–3768.

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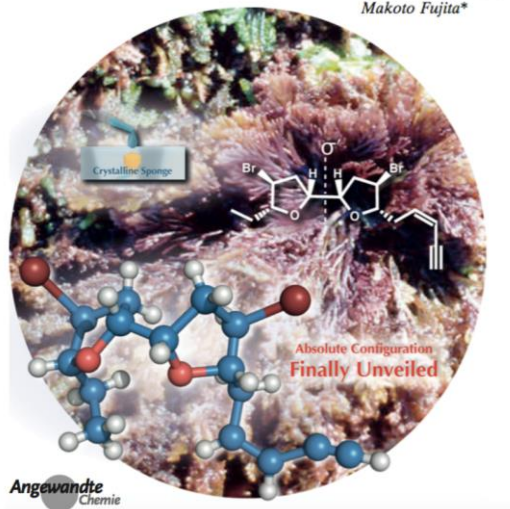
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■ Further Examples

◆ Fujita (2015)

**Determination of the Absolute Configuration of the Pseudo-Symmetric Natural Product Elatenyne by the Crystalline Sponge Method**

Sylvia Urban,\* Robert Brkljača, Manabu Hoshino, Shoukou Lee, and Makoto Fujita\*



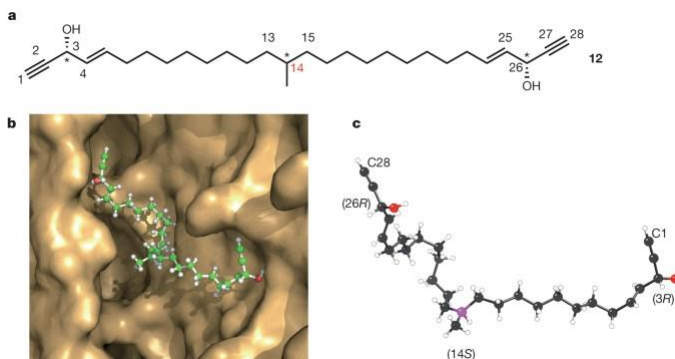
- ◆ Antiparasitic activity
- ◆ Oily substance
- ◆ Pseudo-symmetry results in  $[\alpha] \sim 0^\circ$

Fujita, M.; et al. *Angew. Chem. Int. Ed.* **2016**, *128*, 2728–2732.

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