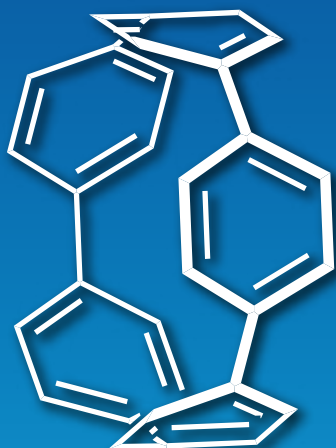


**New**



# The Smallest "Carbon Nanoring" [5]Cycloparaphenylene ([5]CPP)



[C2931]



## Structural Feature

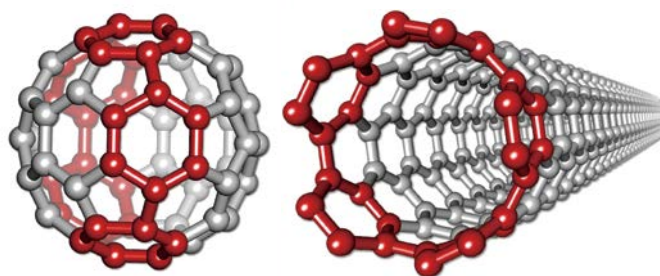
- CPP having the smallest ring size among synthesized other examples
- Cyclic unit structure of fullerene ( $C_{60}$ ) and [5,5] carbon nanotube
- The same diameter as  $C_{60}$  (0.7 nm)

## Properties

- Soluble in organic solvents
- Narrow HOMO-LUMO gap comparable with that of  $C_{60}$

## Possible application

- Organic electronics materials
- Raw material for carbon nanoring derivatives, and bottom up synthesis of CNT
- Molecular host materials



S. Yamago, E. Kayahara, Patent Pending, Appl. No. JP2014-009789. E. Kayahara, V. K. Patel, S. Yamago, *J. Am. Chem. Soc.* **2014**, *136*, 2284-2287. E. Kayahara, V. K. Patel, S. Yamago, *Chem. Eur. J.* **2015**, *21*, 5742-5749.

**C2931 [5]Cycloparaphenylene**

20mg / 100 mg

This material was produced by collaboration with Prof. Yamago at Institute for Chemical Research, Kyoto University.

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