

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



[5]Cycloparaphenylene
20mg / 100mg
[C2931]



Structural Features

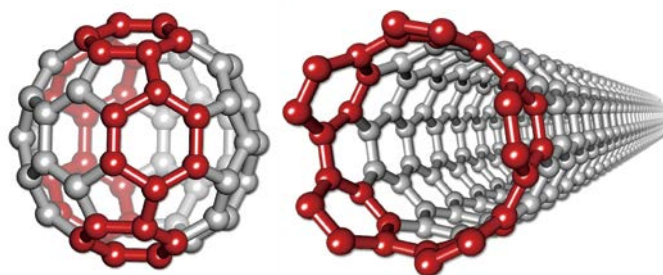
- CPP having the smallest ring size among synthesized other examples
- Cyclic unit structure of fullerene (C_{60}) and [5,5]carbon nanotube
- The same diameter as C_{60} (0.7 nm)

Properties

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

Possible Applications

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



References S. Yamago, E. Kayahara, Patent Pending, Appl. No. JP2014-009789.
E. Kayahara, V. K. Patel, S. Yamago, *J. Am. Chem. Soc.* **2014**, *136*, 2284. DOI: <https://doi.org/10.1021/ja413214q>
E. Kayahara, V. K. Patel, S. Yamago, *Chem. Eur. J.* **2015**, *21*, 5742. DOI: <https://doi.org/10.1002/chem.201406650>

This product was commercialized by collaboration with Prof. Shigeru Yamago.

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