

**Electron spin state of an inclusion complex of a cyclic dimer of metalloporphyrin with metallofullerene**

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The electron spin state of an inclusion complex of a cyclic dimer of metalloporphyrin with metallofullerene was investigated by means of pulsed electron spin resonance (ESR) measurement.

A paramagnetic metallofullerene is a nice building block for a molecular magnet. Wrapping of a metallofullerene with larger  $\pi$ -conjugated molecular envelopes is of great interest, which may lead to an extension of the super-molecular magnet in a 3D-fashion.

The inclusion complex of a cyclic dimer of metalloporphyrin with fullerene exhibits a big association constant. The big association property comes from the flexibility of linkers between two porphyrins. We obtained the experimental evidence of the coupled spin state of the cyclic dimer of copper-porphyrin with La@C<sub>82</sub> by nutation measurements of pulsed ESR.

A big variety would be expected for the spin state of the inclusion complex in terms of the combination of metals on porphyrin and fullerene.