

Thermal Properties of Magnetic-Field-induced Superconductor

Keywords: Organic conductor, magnetic field induced superconductivity

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Background

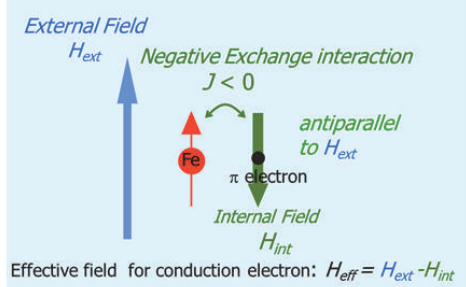
- Magnetic-field-induced superconductivity in organic superconductor.
- Magnetic field – Temperature phase diagram deduced from magnetoresistance.
- No thermodynamic evidence of Magnetic-field-induced superconductivity .

Aim

- Thermal properties of Magnetic-field-induced superconductor.
- Detailed phase diagram deduced from magnetocaloric effect.
- Specific Heat study of Magnetic-field-induced superconductivity.

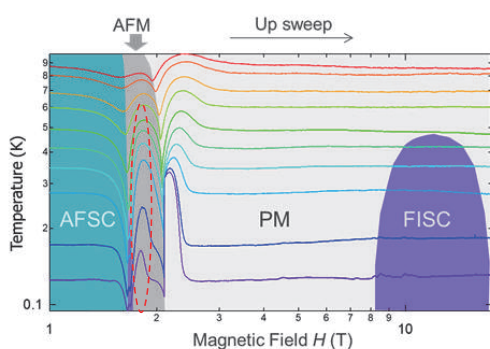
Advanced Research Topics

Jaccarino-Peter compensation effect

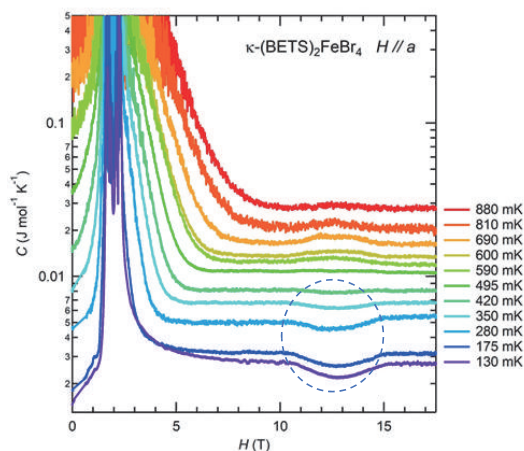


Jaccarino-Peter Effect;

Schematics of the mechanism of field-induced superconductivity. Compensation of the external field and internal field caused by the localized spin.



Magnetocaloric effect.



Field dependence of the Specific heat.

Summary

- Hidden ordered state revealed by the magnetocaloric effect (red broken circle).
- Thermodynamic evidence of the field-induced superconductivity in specific heat measurement (blue broken circle).

Research outcome

- New phenomena caused by the coexistence of local spins and conduction electrons.
- Conduction electrons controlled by the magnetic field through the local spins.