

## Evaluation of magnetocaloric effect from magnetization and heat capacity data

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Magnetic refrigeration is based on the magnetocaloric effect(MCE) - the ability of some materials to heat up when magnetized and cool down when removed from the magnetic field. The available techniques for studying the MCE are: (1) direct measurements by monitoring the change in material's temperature during the application or removal of the magnetic field; and (2) indirect calculations from experimental data of magnetization and/or heat capacity as functions of temperature and magnetic field. In this paper the procedure to evaluate the MCE from magnetization and zero-field heat capacity data is described. The MCE - isothermal magnetic entropy change(Fig. 1) and adiabatic temperature change(Fig. 2) - of gadolinium(Gd) is presented.

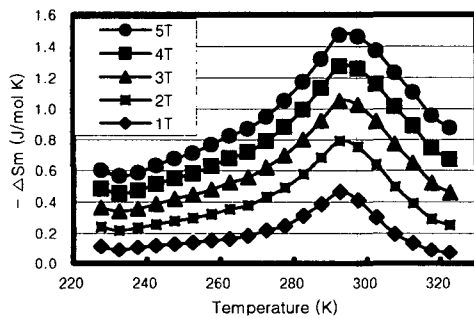


Fig.1. Magnetic entropy change of Gd.

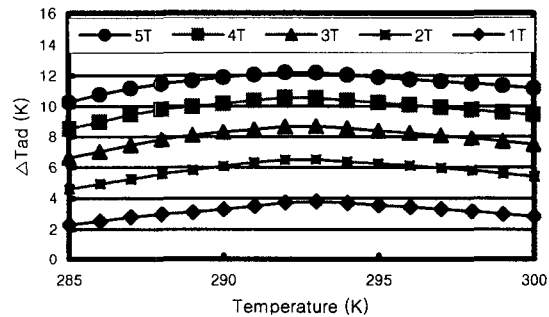


Fig.2. Adiabatic temperature change of Gd.

## References

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