

# Magnetic and magnetocaloric properties of severe plastic deformed $\text{Gd}_{100-x}\text{Y}_x$ alloys ( $x=0..30$ )

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In this work we report the magnetic and magnetocaloric properties of the series of alloys  $\text{Gd}_{100-x}\text{Y}_x$  ( $x=0..2.5, 5, 7.5, 10, 15, 20, 25, 30$ ) treated with the help of severe plastic deformation (SPD) technique. Here we expand (1) our investigation alloys, which are very convenient materials for room-temperature magnetic refrigeration. During SPD treatment we observe the magnetocaloric effect significantly decreased. The value of reduction magnetocaloric effect as in pure Gd case depends on the degree of plastic deformation. The reduction of the Curie temperature is observed due to reduction exchange interaction with increasing nonmagnetic Y atoms concentration.

## References:

[1] S.V.Taskaev, M.D.Kuz'min, K.P.Skokov, D.Yu.Karpenkov, A.P.Pellenen, V.D.Buchelnikov and O.Gutfleisch, JMMM 331 , 33 (2013)

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