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Inverse magnetocaloric effect in metamagnetic In-based alloys at high magnetic fields SUDIP PANDEY, Southern Illinois University Carbondale, YURY KOSHKIDKO, ELVINA DILMIEVA, JACEK CWIK, International Laboratory of High Magnetic Fields and Low Temperatures, Poland , IGOR DUBENKO, ANIL ARYAL, ABDIEL QUETZ, Southern Illinois University Carbondale, ALEXANDER GRANOVSKY, Lomonosov Moscow State University, Russia, ERKKI LHDERANTA, Lappeenranta University of Technology, Finland, ARKADY ZHUKOV, Dpto. de Fsica de Materiales, Fac. Qumicas, UPV/EHU, Spain , SHANE STADLER, Louisiana State University, NAUSHAD ALI, Southern Illinois University Carbondale — Magnetocaloric effects (MCE) in $Ni_{50}Mn_{35}In_{15}$, $Ni_{50.2}Mn_{34.85}In_{14.95}$, and $Ni_{50}Mn_{35}In_{14.250.75}$ Heusler alloys have been studied through direct measurements of the adiabatic temperature change (ΔT_{ad}) using the extraction method for magnetic field changes up to 14 T. Both the ΔT_{ad} and the entropy changes (ΔS_M) increase as the martensitic transition approaches the Curie temperature of the austenitic phase. The ΔT_{ad} increases up to a maximum value of 15 K with field and saturates at high fields. The influence of the rate of change of the magnetic field and the rate of heating to the initial temperature before applying field on the ΔT_{ad} of $Ni_{50}Mn_{35}In_{14.250.75}$ has been studied. It has been shown that increasing the heating rate from 6 to 22 K/min results in an increase of ΔT_{ad} by about 40% for ΔH=10 T. Acknowledgements: This work was supported by the U.S. Department of Energy, DOE Grant No. DE-FG02-06ER46291 (SIU) and DE-FG02-13ER46946 (LSU).

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