Magnetic Moment Enhancement in Mn11Si19 micro-particles
KIYOTAKA HAMMURA, Hitachi Cambridge Laboratory, HARUHIKO UDONO, Ubaraki University, TOMOSUKE AONO, Ibaraki University — Our paper aims to investigate a size dependence of Mn11Si19 magnetism experimentally since there has not been a consensus on it. Mn11Si19, one of the family of compounds referred to as highly manganese silicides (HMS). HMS, in general, have attracted attention because of their potential to be used as thermoelectric materials. Investigation of HMS’s basic properties is required. We measured magnetization curves in Mn11Si19 both in bulk and in powder (about 5μm in diameter) states using a SQUID magnetometer at 5K to 300K. We confirmed paramagnetic properties in bulk and soft ferromagnetic ones in powder states. The Arrott plotting was used for an analysis of the powder’s data.

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