Crystal Growth Research Materials

Many of the samples provided by us are used for some form of research into magnetic properties of materials, often using neutron diffraction techniques where crystal size and crystal quality can be the main requirements.

Other research areas for which our materials are regularly used include surface studies, heat capacity, superconductivity, mechanical properties, ultrasonic and heavy fermion physics. Our work normally involves materials that cannot be obtained commercially in a suitable form for a projected experiment.

This situation may arise because some property of the material (e.g. reactivity, vapour pressure, radioactivity) necessitates highly specialized equipment; alternatively, the preparation techniques may simply be not known, so require considerable background research which commercial concerns may be unwilling or unable to undertake.

Elements purified

Ce	Dy	Er	Gd	Ho	In	La	Nb	Nd
Pb	Pr	Sm	Tb	U	V	Y	Yb	Zr

Examples of single crystals grown

$AgCeSb_2$	AlTi	Au-Ho	$CeAl_2$
$CeCu_2 Si_2$	$Ce_{1-x}Nd_xNi$	Y-Ho	Gd-Lu
CeNiSn	CePdSb	$CeRu_2Si_{0.8}Ge_{0.2}$	Dy
Er	Er-Tm	Fe-Cr	FeRh
Fe-3%Si	Gd	Gd-Y	$HoFe_2$
Ho	Ho-Tb	$Lu_{0.09}Tm_{0.01}Fe_2$	$MoSi_2$
Nd	Nd-Ce	Nd-Pr	Nd-Y
Ni	Ni_3Al	Pr	Pr-Ce
Sc	Sc-Er	Sm(dhcp)	Sm(rhom)
Tb	Terfenol-D	Tm	$TmFe_2$
UAu_2	$U_{14}Au_{51}$	UPd_3	$U(Pd_{1-x}Pt_x)_3$
UPt_3	$U_{1-x}Y_xPd_3$	V_3Si	Y
Y-Er	UCu_5	Pb-In	TiO_2 (Rutile)

Co-doped TiO_2	$YFeO_3$	$GaFeO_3$	$ErFeO_3$
Cr-doped TiO_2			

Examples of compounds and alloys prepared

Ag-Mg	Al-U	Al_3Ce	Ce_3Al
Ce-Dy	Ce-Er	Ce-Ho	$CeIn_2$
$CePb_3$	CePdSb	Ce-Tb	Ce-Y
Co-Cr	$DyFe_2$	$DyMn_2$	$ErFe_2$
FeMn	Fe-V	$GdCo_5$	$GdMn_2$
La-Dy	La-Er	$LaNi_4Al$	$LaNi_{2.5}Al_{2.5}$
$LaNi_4Co$	$LaNi_{2.5}Co_{2.5}$	LaPdSb	$LuFe_3$
Lu_6Fe_{23}	Lu_2Fe_{17}	Mg-Ag	Nb_3Ga
Nb_3Sn	Nb-Ti	Nd-Dy	Nd-Er
Nd-Tb	NiAl	NiFe	Ni_3Fe
Pd_3Y	TaV_2	$TbMn_2$	$Dy_{0.73}Tb_{0.27}Fe_2$
$ThPb_3$	$ThSn_3$	UAl_3	UCu_x
UGe_3	UIn_3	UMn_2	UMn_xFe_y
UNiSn	U_3Ni_3Sn4	UPb_3	$U(Pd_{1-x}Pt_x)_3$
UPdSn	USn_3	USn_xIn_y	USn_2Pb
$Y(Co_{1-x}Al_x)_2$			

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