Title:	Superconductivity in Borides
Authors:	Jayaraj, Anooja (/jspui/browse?type=author&value=Jayaraj%2C+Anooja)
Keywords:	Superconductivity Physics Boride
Issue Date:	5-Aug-2016
Publisher:	IISER-M
Abstract:	The discovery of a novel superconducting state in MgB2 has led to an interest in borides. We have studied several boride compounds to gain greater insight into this new phenomenon. Polycrystalline samples of OsB2 and RuB2 were grown in a tetra arc furnace. X-Ray Diffraction (XRD) data shows that OsB2 crystallizes in orthorhombic structure at room temperature. They contain alternate boron and osmium layers stacked along c-axis. The boron layers in MgB2 are flat whereas that in OsB2 has a chair-like structure. Electrical resistivity measurements were carried out to study superconducting properties of OsB2. It was observed that OsB2 becomes superconducting below Tc = 2.1 K. The resistivity measurement of RuB2 shows that it becomes superconducting below 1.6 K. LuRuB2 was found to be superconducting at around 10.98 K. Pressure studies on the sample showed that the critical temperature decreases with increasing pressure.
URI:	http://hdl.handle.net/123456789/558 (http://hdl.handle.net/123456789/558)
Appears in Collections:	MS-11 (/jspui/handle/123456789/537)

Files in This Item:

File	Description	Size	Format

MS-11031.pdf (/jspui/bitstream/123456789/558/1/MS-11031.pdf)	1.74 MB	Adobe PDF	View/Open (/jspui/bitstream/123456789/558/1/MS-11

Show full item record (/jspui/handle/123456789/558?mode=full)

(/jspui/handle/123456789/558/statistics)