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Topic: Materials Inorganic (MI)

COPPER-ALUMINIUM-OXIDE FILMS AND DEVICES BY PLD

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The delafossite-type compound CuAl_2O_3 was grown by pulsed laser deposition (PLD) in the form of thin films on various substrates, like sapphire and quartz. This material is of special interest, since it represents the rare case of a p-type conducting oxide that is transparent. This property could give rise to variety of optoelectronic devices.

Synthesis of the targets by solid state reaction between copper oxide and aluminium oxide, as well as film deposition by PLD using a KrF excimer laser at 248 nm have been described previously (Quantsol 2000).

Recent attempts to improve conductivity and further characterisation will be described, as well as the formation of devices employing silicon which give rise to a photovoltaic effect.