3Gd$_2$O$_3$–5Fe$_2$O$_3$ Glass Obtained by Rapid Quenching Apparatus Using Laser Beam

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means of differential thermal analysis (DTA) and X-ray diffraction. From the experimental results, the crystallization process was characterized mainly by the two successive transitions, i.e., glassy phase → a new metastable phase → stable phase of La₂O₃·5Nb₂O₆.

**Mössbauer Measurements of Iron Atoms Dispersed in Amorphous Glass-like Carbon**

Seishi YAJIMA and Mamoru OMORI

Various iron species have been prepared by pyrolyzing acetylferrocene-furfural resins at 400°C in vacuum, and analysed by means of Mössbauer spectroscopy. The Mössbauer spectra show that the iron species in an amorphous glasslike carbon matrix are free iron atoms, Fe⁺ ions, iron clusters, superparamagnetic irons and ferromagnetic irons.

**Crystallization of 3Ln₂O₃·5Ga₂O₃ Glasses**

Seishi YAJIMA, Kiyohito OKAMURA and Toetsu SHISHIDO

The oxide glasses of 3Ln₂O₃·5Ga₂O₃ were prepared, using Pr, Nd, Sm, Eu or Gd as a lanthanoid element. Crystallization of the glasses was studied by DTA and X-ray diffraction. A metastable phase was found on the way of the crystallization process of 3Pr₂O₃·5Ga₂O₃ and 3Nd₂O₃·5Ga₂O₃ glasses terminating in the transition into garnet. However, the phase transition transforming the amorphous phase directly into garnet not through a metastable phase was observed in case of 3Ln₂O₃·5Ga₂O₃ glasses (Ln=Sm, Eu or Gd).

**3Gd₂O₃·5Fe₂O₃ Glass Obtained by Rapid Quenching Apparatus Using Laser Beam**

Seishi YAJIMA, Kiyohito OKAMURA and Toetsu SHISHIDO

The oxide glass of 3Gd₂O₃·5Fe₂O₃ (GIG) was prepared using the piston and anvil technique incorporated into a laser melting furnace. The quenching apparatus provides higher quenching rates than an impact quenching apparatus already made. Crystallization and magnetization of the GIG glass have been examined by means of DTA method and magnetic balance.

**Amorphous Phase in Yttrium-Cobalt-Boron System**

Seishi YAJIMA, Kiyohito OKAMURA and Toetsu SHISHIDO
Chemistry Letters (1975), 1227.

By rapid quenching of the melt, an amorphous phase of yttrium-cobalt-boron system was obtained. The phase is stable at room temperature, and its crystallization takes place in the vicinity of 700°C on heating at 10°C/min. Electrical