that the innermost Al_2O_3 tube melted over a length $\simeq$ 10 cm. and the remaining aluminum metal formed a sharp cylindrical band, about 3 cm. wide and $\simeq$ 3 mm. thick, ON the Al_2O_3, the two phases being perfectly defined and separate.

A ThO_2 tube also has been melted in the plasma jet.

The extended range of use of liquid oxide containers is, on the average

Al_2O_3	2288°K. (m.p.) to $\simeq$ 3800°K.
ZrO_2	3000°K. (m.p.) to $\simeq$ 4600°K.
ThO_2	3300°K. (m.p.) to $\simeq$ 4700°K.

The ratio of the vapor pressure of the container to the total pressure can be adjusted, as desired, by operating the plasma jet and furnace at a higher total pressure.

Thus a way is now open to extend research, particularly on chemical reactions in liquid phase, (for example, between the container and any added substance, lighter than the container) to a much higher temperature range. A full report will be published later.

The above method is not well suited for physical measurements (such as density, electrical resistivity, etc.) because of imperfect geometry. This can be accomplished by the use of centrifugal furnaces heated by ohmic resistance. This type of furnace will be described shortly.

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