

(110-032) - Dilatometric monitoring of YSZ flash-sintering

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A special experimental arrangement, consisting basically on a vertical dilatometer connected either to an impedance analyzer or to an ac voltage supply, has been set up for sintering polycrystalline ceramic green compacts to a chosen shrinkage level by passing an electric current through the grain boundaries. 8YSZ sintered pellets were produced by applying a 40 Vac (1000 Hz) voltage at 800 °C for a few seconds. The microstructure of the flash grain welded sintered pellets were compared to those of conventionally sintered (1500 °C) pellets. Close to full densities have been achieved using the flash grain welding technique at 800 °C, but these pellets have smaller average grain size than the ones conventionally sintered.
