FLASH SINTERING OF ZIRCONIA-SILVER CERMET FOR HIGH-TEMPERATURE TRIBOLOGICAL APPLICATIONS

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The possibility of sintering Yttria-stabilized zirconia (YSZ) - Silver (Ag) cermets of varying compositions (0 wt.-% -50 wt.-% Ag) with a DC electric field is studied. Nearly theoretical density is achieved with the electric field at a considerably lower furnace temperature. Sintered materials from the process are characterized. Room temperature and high-temperature tribological studies were conducted. In addition, the lubrication mechanisms at different conditions were discussed.