**Instructions for Sintering and Density-Porosimetry Lab Report**

The report for the sintering lab should be **typed by a computer** and consist of the following:

**i.** A title page including student name, number and lab group.

**ii.** A background section that **briefly** discusses

**a.** Solid state sintering, in general

**b.** Powder characteristics and process parameters affecting sintering

**c.** SPS and what distinguishes it from other pressure-assisted sintering methods

**iii.** An Experimental Procedure section that summarizes the method used, the material(s) studied, and the apparatus used.

**iv.** A Results and Discussion section.

**a.** Explain the sintering graph (indicate on your report which curve shows temperature, force and piston travel and temperature which densification starts (not holding temperature) for designated material (copper)).

**b.** Calculate water absorption and bulk density (via given values below).

**c.** Calculate **relative density** of sintered copper (you will need bulk density and theoretical density of copper!)

**v.** References (American Ceramic Society Style, complete citation)

|  |  |  |
| --- | --- | --- |
| Dry Weight (g.) | Suspended Weight (g.) | Wet Weight (g.) |
| 1,9867 | 1,6816 | 1,9916 |

**Sintering Graph of ZrO2**

Sintered under …°C, 100°C/min, 40 MPa and … min.

