

SELF-JOINING OF Y-TZP BY FLASH EVENT UNDER AN AC ELECTRIC FIELD

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In this study, we conducted flash joining experiments using an AC field on Y-TZP bodies. Two Y-TZP bodies were successfully joined by applying an AC field at $60 \text{ mA} \cdot \text{mm}^{-2}$ for 80 s at a furnace temperature of $1000 \text{ }^\circ\text{C}$. The AC-flash joined specimen exhibited 92% of the flexural strength of the as-sintered Y-TZP body. In this presentation, we will discuss the necessary conditions for an almost complete self-joining of Y-TZP bodies.

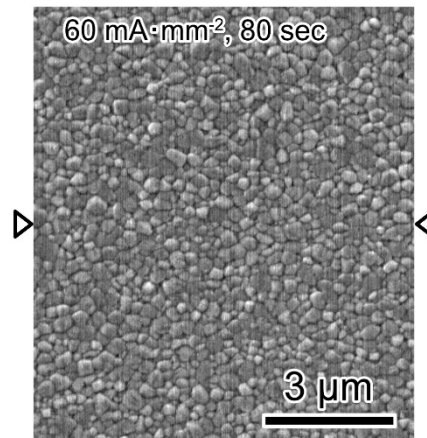


Figure 1 – SEM images at the center of the longitudinal sections of the specimen AC-flash-joined at 60 mA mm^{-2} for 80 s. Triangles indicate the joined interfaces in the images.

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