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A vitreous porcelain body was fabricated by a conventional sintering and spark plasma sintering (SPS). The effects of sintering parameters such as heating rate, dwell time, temperature, and pressure were investigated. The porcelain sintered using the SPS techniques attained higher apparent bulk density of 2.52 g/cm^3 compared with a conventionally sintered porcelain, which is 2.39 g/cm^3, however, both of them exhibited similar water absorption of 0.01%. The SPS sintered porcelain presented a dense microstructure, which cannot be seen in conventionally sintered porcelain products. Mineralogically, the SPS sintered porcelain contained residual albite, quartz, mullite and glass while the conventionally sintered porcelain contained mullite, quartz, and glass. From the apparent bulk density, water absorption, microstructure and X-ray diffraction results, it can be deduced that the SPS sample required only a small amount of glass phase to achieve the fully dense microstructure compared with conventionally sintered porcelain. However, a comparative study of phase evolution of porcelains via conventional sintering and SPS such as glass and mullite formation in spark plasma sintering are being verified and will be discussed.