



PROJECT "THEORY AND APPLICATIONS OF SINTER-CRYSTALLIZATION" DN 19/7

Production of Sintered Glass-Ceramics at Jiangxi Pujing New Materials Co. Ltd.

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Abstract: At Jiangxi Pujing New Materials Co. Ltd, valorization of industrial solid wastes such as tailings, slags and waste glasses is achieved with the production of the high-end-use construction and architecture glass-ceramics by melt-quenching followed by sinter-crystallization. The products which are characterized by a porous base body coated with a dense surface layer have been successfully applied as exterior and interior walls of buildings. The double-layer structure combines the sound- and heat-insulating properties with the excellent



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chemical durability and the flexible design of decorative patterns. At the Pujing plant, a melting furnace is equipped for making glass frits (120 tonne/day) and a tunnel kiln (365 m in length) is used for sinter-crystallization. The current capacity of the Pujing plant is 200,000 m² glass-ceramic panel per year. The Pujing team and its collaborators have also been actively engaged in optimization studies on the composition of parent glass and thermal treatment schedule as well as in fundamental research on the mechanisms how various elements such as Mg, Fe, F, Cr, P and B affect the sinter-crystallization behavior. The gained knowledge would be used to guide the industrial scale production.