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The invention relates to semiconductor material production processes and can be used in semiconductor technology. The process, according to the invention, consists in sintering ZnO powders by the chemical transport reaction method in a closed volume at a sintering temperature of $900...150^{\circ}$ C, for 48...72 hours, with a temperature gradient in the sintering region of $\leq 10^{\circ}$ C/cm and a cooling rate of the resulting ceramics of $\leq 100^{\circ}$ C/hour. As transport agents are used HCl with an initial pressure of 1...6 atm, H_2 with an initial pressure of 50...200% of the initial HCl pressure, and C in the amount of \leq HCl mol.

Claims: 1 Fig.: 3