

The invention relates to methods for producing semiconductor materials and can be used in semiconductor technology. The method for producing ZnO:Ga:Cl ceramics at low temperatures consists in sintering ZnO and Ga₂O₃ powders in a closed volume. Sintering is carried out by chemical transport reactions, using HCl as a transport agent, with an initial pressure at a sintering temperature equal to 1...6 atm, at the same time Ga₂O₃ powders with a concentration equal to 1...5 mol% are additionally used, with a granule size of no more than 300 μm and a sintering temperature of 900...150°C.

The method for producing ZnO:Ga:Cl thin layers at low temperatures consists in magnetron sputtering of ceramic targets. The targets contain Cl impurities with a concentration of $1 \cdot 10^{18} \dots 5 \cdot 10^{19} \text{ cm}^{-3}$, which improve the dissolution of Ga impurities in the ZnO crystal lattice, at the same time Ga₂O₃ with a concentration equal to 1...5 mol% is additionally used in the targets, and the deposition temperature is equal to 80...300°C.

Claims: 2

Fig.: 4