

The invention relates to a technology for deposition of oxide semiconductor films, in particular to a method for producing columnar ZnO films, using fast photonic annealing for the manufacture of gas sensors and micro-nanoelectronic devices.

The method for producing Eu-doped and Pd-functionalized columnar ZnO films comprises degreasing the glass substrate and washing it, dissolving three reagents in deionized water, 0.033M ZnSO₄·7H₂O, 0.65M NaOH and 0.004M EuCl₃, 100 ml each, mixing thereof and adding to the solution up to 500 mL of deionized water, producing an Eu-doped columnar ZnO film by immersing the glass substrate in the resulting solution, at room temperature, for 1 s and washing it with immersion in distilled water at a temperature of 90°C, for 1 s, repeating the immersions depending on the required film thickness, with subsequent fast photonic annealing at 650°C for 60 s in air and functionalization with Pd by dipping the produced film for 5 s in an aqueous solution, containing 1% PdCl₂ at room temperature.

Claims: 1

Fig.: 4