Method for polishing a semiconductor wafer and polished semiconductor wafer producible according to the method

Abstract:

The invention relates to a method for polishing a semiconductor wafer between an upper polishing plate and a lower polishing plate, the semiconductor wafer being polished on both sides while lying in a recess of a carrier by supplying a polishing agent. The method comprises double-sided polishing off the semiconductor wafer in a first polishing step, which is concluded with a negative overhang, the overhang being the difference between the thickness of the semiconductor wafer and the thickness of the carrier after the first polishing step, and double-sided polishing of the semiconductor wafer in a second polishing step, in which less than 1 µm of material is polished from the side surfaces of the semiconductor wafer. The invention also relates to a silicon semiconductor wafer having a polished front side and a polished rear side with a front side global planarity expressed by an SBIRmax value of less than 100 nm, and with a front side local planarity expressed by a PSFQR value of 35 nm or less in an edge region, an edge exclusion of 2 mm being considered in each case.

Fig. 1B