

ABSTRACT

ABRADING PLATE AND POLISHING METHOD USING THE SAME

The present invention provides an abrading plate having self-stopping capability such that when an object, such as a semiconductor wafer having a device structure that includes raised regions and depressed regions fabricated on the surface, is being polished, the raised regions are removed and polishing stops automatically. A method of using the abrading plate is also provided.

The present invention relates to an abrading plate that produces a flat and mirror polished surface on an object with an abrading plate comprised by abrasive particles having a chemical purity of not less than 90 % and a particle size of not more than two micrometers; a binder material; and a given volume of porosity, wherein a ratio of the abrasive particles and the binder material is not less than 1:0.5 by volume, and proportions of abrasive particles, a binder material and porosity are, respectively, not less than 10 %, not more than 60 % and 10-40 by volume.

The method is provided for polishing an object having a device structure that includes raised regions and depressed regions fabricated on the surface according to the steps of polishing the surface for a given duration with a liquid not containing abrasive particles so as to eliminate the raised regions to obtain a flat surface, and performing additional surface removal by supplying abrasive particles to the polishing interface to remove surface material uniformly from the entire surface.