Polycrystalline Diamond Substrate Filling Process

Diamond films produced by the CVD method frequently are very rough as is usual for polycrystalline surfaces. Often, a large amount of diamond must be removed in order to produce a totally planar surface due to the small voids that are inevitably present between the crystal points. This large removal of diamond increases processing costs and wastes diamond. The method of planarizing revealed in this patent does not require the removal of all of the small voids in the surface of the diamond substrate, because the remaining voids are filled in with a suitable filler material. The filled substrate surface is then polished (possibly using one of the two previous polishing methods) to a final finish – thus saving time, cost and diamond.

The technology is covered under Patent 5,472,370 and is available for licensing.

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