

Title (en)

SILICON BLADES FOR SURGICAL AND NON-SURGICAL USE

Title (de)

SILICIUMKLINGEN FÜR DEN CHIRURGISCHEN UND NICHTCHIRURGISCHEN GEBRAUCH

Title (fr)

LAMES DE SILICIUM POUR UTILISATION CHIRURGICALE ET NON CHIRURGICALE

Publication

**EP 1664384 A4 20100428 (EN)**

Application

**EP 04784418 A 20040917**

Priority

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- US 50345903 P 20030917

Abstract (en)

[origin: WO2005027729A2] Ophthalmic surgical blades (734) are manufactured from either a crystalline or polycrystalline material, preferably in the form of a wafer. The method comprises preparing the crystalline or polycrystalline wafers by mounting them and machining trenches into the wafers. Methods for machining the trenches, which form the bevel blade surfaces (752), include a diamond blade saw, laser system, ultrasonic machine, a hot forge press and a router. The wafers are then placed in an etchant solution which isotropically etches the wafers in a uniform manner, such that layers of crystalline or polycrystalline material are removed uniformly, producing single, double or multiple bevel blades (734). Nearly any bevel angle can be machined into the wafer which remains after etching. The resulting radii of the blade edges is 5-500 nm, which is the same caliber as a diamond edged blade, but manufactured at a fraction of the cost. The ophthalmic surgical blades can be used for cataract and refractive surgical procedures, as well as microsurgical, biological and non-medical, non-biological purposes.

IPC 8 full level

**A61B 17/32** (2006.01); **C23F 1/00** (2006.01); **A61B 17/00** (2006.01)

IPC 8 main group level

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Citation (search report)

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- [Y] EP 1092515 A1 20010418 - NEWMAN MARTIN H [US]
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Designated contracting state (EPC)

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**WO 2005027729 A2 20050331**; **WO 2005027729 A3 20050804**; AU 2004273978 A1 20050331; CA 2538164 A1 20050331; CN 101904766 A 20101208; CN 1863940 A 20061115; CN 1863940 B 20100818; EP 1664384 A2 20060607; EP 1664384 A4 20100428; JP 2007505706 A 20070315; MX PA06002875 A 20060605; RU 2006112594 A 20071110; RU 2363771 C2 20090810

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