SILICON GENESIS CORPORATION ISSUED PATENTS

| <u>Title - Description</u> | Country | Patent No. |
|---|------------|--------------------|
| Method and Structure for Fabricating Bonded Substrate Structures Using Thermal Processing to Remove Oxygen Species | USA | 7598153 |
| Method and System for Fabricating Strained Layers for the Manufacture of Integrated Circuits | USA | 7595499 |
| Method and Structure for Implanting Bonded Substrates for Electrical Conductivity | USA | 7547609 |
| Method and Apparatus for Flag-Less Wafer Bonding Tool | USA | 7479441 |
| Method and Device for Controlled Cleaving Process Method for Enhancing Semiconductor Devices Using Strained Silican Regards Metarial | USA | 7470600 |
| Method for Fabricating Semiconductor Devices Using Strained Silicon Bearing Material Manufacturing Strained Silicon Substrates Using a Backing Material | USA | 7462526 7427554 |
| Controlled Process and Resulting Device | USA | 7410887 |
| A Method and Structure for Implanting Bonded Substrates for Electrical Conductivity | USA | 7399680 |
| Method and System for Fabricating Strained Layers for the Manufacture of Integrated Circuits | USA | 7391047 |
| Method and System for Lattice Space Engineering | USA | 7390724 |
| Cleaving Process to Fabricate Multilayered Substrates Using Low Implantation Doses | USA | 7378330 |
| Controlled Cleaving Process | USA | 7371660 |
| Method for Fabricating Semiconductor Devices Using Strained Silicon Bearing Material | USA | 7354815 |
| Thin Handle Substrate Method and Structure for Fabricating Devices Using One or More Films Provided by a Layer Transfer Process | USA | 7351644 |
| Method and Device for Controlled Cleaving Process Surface Finishing of SOI Substrates Usina an EPI Process | USA | 7348258 7253081 |
| Thin Handle Substrate Method and Structure for Fabricating Devices Using One or More Films Provided by a Layer Transfer Process | USA | 7166520 |
| Controlled Cleaving Process | USA | 7160790 |
| Non-Contact Etch Annealing of Strained Layers | USA | 7147709 |
| Method and System for Fabricating Strained Layers for the Manufacture of Integrated Circuits | USA | 7094666 |
| Method and System for Source Switching and In-Situ Plasma Bonding | USA | 7078317 |
| Cleaving Process to Fabricate Multilayered Substrates Using Low Implantation Doses | USA | 7056808 |
| Treatment Method of Film Quality for the Manufacture of Substrates | USA | 6969668 |
| In Situ Plasma Wafer Bonding Method | USA | 6908832 |
| Gettering Technique for Wafers Made Using a Controlled Cleaving Process | USA | 6890838 |
| Smoothing Method for Cleaved Films Made Using a Release Layer Method and Device for Controlled Cleaving Process | USA | 6881644 |
| Method and Device for Controlled Cleaving Process Method for Multi Frequency Rending | USA | 6790747 6780759 |
| Method for Multi-Frequency Bonding In Situ Plasma Wafer Bonding Method | USA | 6645828 |
| Controlled Cleaving Process | USA | 6632724 |
| System for the Plasma Treatement of Large Area Substrates | USA | 6632324 |
| Controlled Cleavage Process Using Pressurized Fluid | USA | 6582999 |
| Silicon-On-Silicon Hybrid Wafer Assembly | USA | 6558802 |
| Substrate Cleaving Tool and Method | USA | 6554046 |
| Gettering Technique for Wafers Made Using a Controlled Cleaving Process | USA | 6548382 |
| Particle Distribution Method and Resulting Structure for a Layer Transfer Process | USA | 6544862 |
| Method for Fabricating Multi-Layered Substrates | USA | 6534381 |
| Controlled Cleavage Process and Device for Patterned Films Method for Non Mass Selected Ion Implant Profile Control | USA | 6528391 6514838 |
| Nozzle for Cleaving Substrates | USA | 6513564 |
| Controlled Cleavage Process Using Pressurized Fluid | USA | 6511899 |
| Cleaving Process to Fabricate Multilayered Substrates Using Low Implantation Doses | USA | 6500732 |
| Surfacing Finishing of SOI Substrates Using an EPI Process | USA | 6489241 |
| High Temperature Implant Method and Apparatus | USA | 6458723 |
| Controlled Cleavage Process and Resulting Device Using Beta Annealing | USA | 6458672 |
| Smoothing Method for Cleaved Films Made Using Thermal Treatment | USA | 6455399 |
| Method and System for Generating a Plurality of Donor Wafers and Handle Wafers Prior to an Order Being Placed by a Customer | USA | 6448152 |
| System for the Plasma Treatment of Large Area Substrates Controlled Cleavage Thin Film Separation Process Using a Reusable Substrate | USA | 6338313 |
| Cluster Tool System Software Using Plasma Immersion Ion Implantation | USA | 6335264 6321134 |
| Enhanced Plasma Mode, Method, and System for Plasma Immersion Ion Implantation | USA | 6300227 |
| Cleaved Silicon Thin Film With Rough Surface | USA | 6294814 |
| Pre-Semiconductor Process Implant and Post-Process Film Separation | USA | 6291326 |
| Controlled Cleavage Process and Device for Patterned Films Using a Release Layer | USA | 6291314 |
| Method and Device for Controlled Cleaving Process | USA | 6291313 |
| Controlled Cleavage Process Using Patterning | USA | 6290804 |
| Surface Finishing of SOI Substrates Using an EPI Process | USA | 6287941 |
| Method and Device for Controlled Cleaving Process | USA | 6284631 |
| Method for Non Mass Selected Ion Implant Profile Control Collection Devices for Plasma Immersion Ion Implantation | USA USA | 6274459 6269765 |
| Controlled Cleavage Process and Device for Patterned Films Using Patterned Implants | USA | 6269765 |
| Economical Silicon-on-Silicon Hybrid Wafer Assembly | USA | 6245161 |
| Contoured Platen Design for Plasma Immersion Ion Implantation | USA | 6228176 |
| Method for Surface Treatment of Substrates | USA | 6221774 |
| Substrate Cleaving Tool and Method | USA | 6221740 |
| Coated Platen Design for Plasma Immersion Ion Implantation | USA | 6217724 |
| Enhanced Plasma Mode and Computer System for Plasma Immersion Ion Implantation | USA | 6213050 |
| | USA | 6207005 |
| Cluster Tool Apparatus Using Plasma Immersion Ion Implantation | 1 | 6204151 |
| Cluster Tool Apparatus Using Plasma Immersion Ion Implantation Smoothing Method for Cleaved Films Made Using Thermal Treatment | USA | |
| Cluster Tool Apparatus Using Plasma Immersion Ion Implantation Smoothing Method for Cleaved Films Made Using Thermal Treatment Device for Patterned Films | USA | 6187110 |
| Cluster Tool Apparatus Using Plasma Immersion Ion Implantation Smoothing Method for Cleaved Films Made Using Thermal Treatment Device for Patterned Films Shielded Platen Design for Plasma Immersion Ion Implantation | USA USA | 6187110 6186091 |
| Cluster Tool Apparatus Using Plasma Immersion Ion Implantation Smoothing Method for Cleaved Films Made Using Thermal Treatment Device for Patterned Films | USA | 6187110 |

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|--|----------------|--|
| Controlled Cleavage Process and Resulting Device Using Beta Annealing | USA | 6162705 |
| Controlled Cleavage Thin Film Separation Process Using a Reusable Substrate | USA | 6159825 |
| Silicon-on-Silicon Wafer Bonding Process Using a Thin Film Blister-Separation Method | USA | 6159824 |
| Controlled Cleavage System Using Pressurized Fluid | USA | 6155909 |
| Cluster Tool Method Using Plasma Immersion Ion Implantation | USA | 6153524 6146979 |
| Pressurized Microbubble Thin Film Separation Process Using a Reusable Substrate Removable Liner Design for Plasma Immersion Ion Implantation | USA | 6120660 |
| Novel Distributed System and Code for Control and Automation of Plasma Immersion Ion Implanter | USA | 6113735 |
| Planarizing Technique for Multilayered Substrates | USA | 6103599 |
| Gettering Technique for Silicon-on-Insulator Wafers | USA | 6083324 |
| Perforated Shield for Plasma Immersion Ion Implantation | USA | 6051073 |
| Silicon-On-Silicon Hybrid Wafer Assembly | USA | 6048411 |
| Method for Controlled Cleaving Process | USA | 6033974 |
| Controlled Cleaving Process | USA | 6013563 |
| Reusable Substrate for Thin Film Separation | USA | 6010579 |
| Controlled Cleavage Process Using Pressurized Fluid | USA | 5994207 |
| Controlled Cleavage Process and Device for Patterned Films | USA | 5985742 |
| Tumbling Barrel Plasma Processor | USA | 5945012 |
| System for the Plasma Treatment of Large Area Substrates | USA | 5653811 |
| Layer Transfer of Films Utilizing Thermal Flux Regime For Energy Controlled Cleaving. | USA | 8637382 |
| Method and Device for Slicing a Shaped Silicon Ingot Using Layer Transfer | USA | 8,623,137 |
| Method and Structure for Fabricating Solar Cells Using a Thick Layer Transfer Process | USA | 8,563,402 |
| Race Track Configuration and Method for Wafering Silicon Solar Substrates | USA | 8330126 |
| Techniques for Forming Thin Films by Implantation with Reduced Channeling | USA | 8329557 |
| Layer Transfer of Films Utilizing Controlled Propagation | USA | 8293619 8241996 |
| Substrate Stiffness Method and Resulting Devices for Layer Transfer Process Apparatus and Method of Temperature Control During Cleaving Processes of Thick Film Materials | USA | |
| Non-Contact Etch Annealing of Strained Layers | USA | 8,222,119 8187377 |
| Method and System for Continuous Large-Area Scanning Implantation Process | USA | 8,153,513 |
| Method for Fabricating Semiconductor Devices Using Strained Silicon Bearing Material | USA | 8143165 |
| Free-Standing Thickness of Single Crystal Material and Method Having Carrier Lifetimes | USA | 8133800 |
| Method and Structure for Thick Layer Transfer Using a Linear Accelerator | USA | 8124499 |
| Method and Structure for Fabricating Solar Cells Using a Thick Layer Transfer Process | USA | 8110480 |
| Method and Structure for Fabricating Multiple Tiled Regions onto a Plate Using a Controlled Cleaving Process | USA | 8071463 |
| Method and Structure for Fabricating Multiple Tiled Regions onto a Plate Using a Controlled Cleaving Process | USA | 8012855 |
| Controlled Process and Resulting Device | USA | 8012852 |
| Method and Structure for Fabricating Solar Cells Using A Layer Transfer Process | USA | 8012851 |
| Method and Structure for Fabricating Multiple Tiled Regions onto a Plate Using a Controlled Cleaving Process | USA | 7911016 |
| ivietnod and Structure Using Selected implant Angles Using a Linear Accelerator Process for ivianufacture of Free Standing Films of Materials | USA | 7910458 |
| Liquid Based Substrate Method and Structure for Layer Transfer Applications | USA | 7910456 |
| Method and Structure for Fabricating Solar Cells Using A Layer Transfer Process | USA | 7863157 |
| Controlled Process and Resulting Device | USA | 7846818 |
| Method and Edge Region Structure Using Co-Implanted Particles for Layer Transfer Processes | USA | 7811901 |
| Method and Structure for Fabricating Solar Cells Using a Thick Layer Transfer Process | USA | 7811900 |
| Controlled Cleaving Process Controlled Process and Populsian Populse | USA | 7781305 |
| Controlled Process and Resulting Device Applications and Equipment of Substrate Stiffness Method and Resulting Devices for Layer Transfer Processes on Quartz or Glass | USA | 7776717 7772088 |
| Method and Structure for Fabricating Solar Cells Using a Layer Transfer Processes | USA | 7772088 |
| Controlled Process and Resulting Device | USA | 7759217 |
| Method and Structure for Fabricating Multiple Tiled Regions onto a Plate Using a Controlled Cleaving Process | USA | 7674687 |
| Method and Structure for Implanting Bonded Substrates for Electrical Conductivity | USA | 7629666 |
| Method and Device for Controlled Cleaving Process | USA | 6486041 |
| Generic Layer Transfer Methodology by Controlled Cleavage Process | USA | 6391740 |
| Controlled Cleavage Process Using Pressurized Fluid | USA | 6013567 |
| Method for Treating Semiconductor Material | Kingdom | 2409340 |
| Race Track Configuration and Method for Wafering Silicon Solar Substrates | Korea (South) | 10-1163282 |
| Free-Standing Thickness of Single Crystal Material and Method Having Carrier Lifetimes | Korea (South) | 10-1154133 |
| Method and Structure for Fabricating Bonded Substrate Structures Using Thermal Processing to Remove Oxygen Species | Korea (South) | 10-0996539 |
| An Apparatus and Method for Controlled Cleaving | Korea (South) | 10-0810825 |
| Plasma Treatment Apparatus for Large Area Substrates | Japan | 4128217 |
| Surface Finishing of SOI Substrates Using an EPI Process | Germany | 1194949 |
| Surface Finishing of SOI Substrates Using an EPI Process | France | 1194949 |
| Surface Finishing of SOI Substrates Using an EPI Process | EPO | 1194949 |
| System For The Plasma Treatment Of Large Area Substrates A Controlled Cleavage Process | EPO China | 0842307 |
| A Controlled Cleavage Process Method for Entriceting Erro Standing Thickness of Meterials Using One or More Semiconductor Substrates | China China | ZL98804976.7 |
| Method for Fabricating Free Standing Thickness of Materials Using One or More Semiconductor Substrates | | ZL200810009149.0 |
| Method and Structure for Thick Layer Transfer Using A Linear Accelerator | China China | ZL200780041135.0 |
| Continuous Large-Area Scanning Implantation Process | China | ZL200780026734.5 |
| Substrate Stiffness Method and Possiting Devices | Orillia | ZL200680014752.7 ZL2006101629001. |
| Substrate Stiffness Method and Resulting Devices A Method and Structure for Implanting Bonded Substrates for Electrical Conductivity | China | |
| A Method and Structure for Implanting Bonded Substrates for Electrical Conductivity | China China | |
| A Method and Structure for Implanting Bonded Substrates for Electrical Conductivity An Apparatus and Method for Controlled Cleaving | China | ZL200580002085.6 |
| A Method and Structure for Implanting Bonded Substrates for Electrical Conductivity | | ZL2005101629001. ZL200580002085.6 ZL 200910138229.0 ZL 200810006997.6 |