The P-SOG Filling Shallow Trench Isolation Technology for sub-70nm Devices

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A novel Polysilazane-based inorganic Spin-On-Glass filling Shallow Trench Isolation (P-SOG filling STI) technology is developed for sub-70 nm devices, for the first time. A key processing step of this P-SOG filling STI technology is annealing after a CMP process. The post-CMP P-SOG annealing eliminates a field oxide recess problem. This technology shows good electrical characteristics compared with a HDP oxide filling STI. The P-SOG filling STI is a promising candidate for the future isolation technology.