
Research and patent trend analysis of plasma technology for next-generation semiconductor manufacturing process and manufacturing equipment development

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In response to recent technological advances and increased demand for smart devices related to the fourth industrial revolution, semiconductor manufacturing process technology has evolved to the three-dimensional structure in order to improve the performance of semiconductors. However, the technology development of semiconductor manufacturing processes and manufacturing equipment that need to support this is still in progress, and securing these technologies acts as a major competitive element among countries operating the semiconductor industry.

Recently, Korea is entering a new crisis. These reasons are due to the strengthening of sustainable technological capabilities of semiconductor advanced countries such as the United States and Japan and new competitors like China appeared. Domestic enterprises also face many difficulties, as major global semiconductor manufacturing equipment makers also continuously strengthen competitiveness and market power through acquisitions.

In order to ensure the sustainability and support for revitalization of the semiconductor industry, which is the core of the 4th industrial revolution that leads the creation of next-generation industries such as IoT, big data, smart cars, intelligent robots and new markets In order to derive the development strategy, we analyze research trends and patent trends for technology development of semiconductor manufacturing process and manufacturing equipment based on plasma technology.