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New RF Power Supplies for Plasma Applications with New Levels of Operational Reliability and Energy EfficiencyManfred Blattner¹¹HUETTINGER Electronics, Freiburg, Germany

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In terms of productivity and efficiency, mass production processes depend on the reliability of manufacturing tools. Especially in solar panel production and semiconductor manufacturing, many production tools utilize plasma-assisted film deposition processes. Key to optimum yield and efficiency of such processes is the stable and reliable delivery of RF (13.56 MHz) power.

HÜTTINGER's series of RF power supplies apply a patented RF combiner technology and introduce an advanced RF switch mode design. As a major improvement, higher levels of reliability and energy conversion efficiencies are achieved. At 13.56 MHz RF output, a portfolio of RF power supplies delivers power levels from 3 kW up to 48 kW. Typical applications for RF power in plasma applications are presented. The new innovative reliability properties are explained with data from various life test cycles. Case studies for savings and benefits due to the superior efficiency show the generator's suitability for improved cost of ownership.

Keywords

RF power

plasma stability

PECVD

Etch

Efficiency