

High Power Impulse Magnetron Sputtering (HIPIMS)

High Power Impulse Magnetron Sputtering (HIPIMS) is coming of age as scientific understanding ripens and industrial applications emerge rapidly. Having attracted a number of abstracts during its first year as an independent Technical Advisory Committee and following a four year run as a Hot Topic, HIPIMS is inviting new SVC TechCon contributions.

HIPIMS is ionized magnetron sputtering, which utilizes power densities in the range of kilowatts per cm² to generate high-density plasma in order to ionize the sputtered metal and activate reactive gas atmospheres.

The technology has been evolving rapidly and is improving the performance of coatings in several fields such as semiconductor devices, photovoltaics, sensor devices, optical coatings, and new applications for hard coatings resistant to wear, high temperature oxidation, and corrosion. The demands placed by these applications are driving innovations in power supply design, process control and dedicated plasma diagnostics equipment. At the same time, new science is emerging to predict both plasma behavior and coating synthesis.

New technologies and plasma sources based on the ideas behind HIPIMS are also starting to emerge. The session aims to provide a forum to discuss all aspects of the technology, including, but not limited to:

- *HIPIMS plasma and discharge science and diagnostics – experimental and modeling approaches*
- *New plasma sources based on high impulse power*
- *New plasma sources to produce highly ionized metal plasma and gas activation*
- *Hardware development – power supplies, pulse trains and magnetron configurations*
- *Process development and stability*
- *Substrate pre-treatment prior to coating deposition*
- *Coating deposition in reactive and non-reactive atmosphere*
- *Performance of coatings in different applications*
- *Wear protection: tooling, tribological, and biomedical*
- *Environmental protection: oxidation and corrosion*
- *Optical properties*
- *Electrical properties*

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