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## Recent Work

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Pulsed Metal Plasmas

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## **Pulsed Metal Plasmas**

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A review is presented on pulsed metal plasmas used for surface engineering and thin film deposition. Pulsed laser ablation, pulsed (filtered) arc plasmas, and high power (im)pulse sputtering are the main approaches to producing pulsed metal plasmas. Each of them has a set of distinct properties. By partially or fully ionizing the metal (and background gas, if applicable) one can extend the possibilities of widely used physical vapor deposition (PVD) methods. The knowledge gained in the fields of plasma-assisted and ion-beam-assisted deposition (IBAD) can be applied: pulsed metal plasmas can be used for self-ion-assisted deposition. Effects of energetic condensation include interface mixing, densification, buildup of compressive stress, thermal spike annealing and stress reduction, and texturing for selected materials.

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