Extending Impact Conditions in Cold Spraying

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Recent improvements in cold spray equipment will be reviewed, including higher temperatures up to 1000°C and new nozzles with higher throughput, leading to up to 100 m/s higher impact velocities. These enhanced impact conditions allow for better coating performance and widen the range of sprayable materials.

Different examples and respective coating properties are presented to elucidate the potential of cold spray for a variety of applications: high-strength Ti coatings for aircraft parts, Zn alloy coatings for printing forms, Cu and Cu/W composites for high-power electronics, and photocatalytic nanocrystalline TiO2-coatings for environmental technology.