POWDER PORT BLOW-OFF FOR THERMAL SPRAY PROCESSES

ABSTRACT OF THE DISCLOSURE

A powder port blow-off system for a plasma spray process includes a faceplate that includes a bore therein that is co-radially aligned with a nozzle of a plasma spray gun, which emits a plasma plume. A plurality of powder feed ports are arranged circumferentially around the nozzle for injecting a flow of powder particles toward the plasma plume. A plurality of powder port blow-offs are arranged circumferentially around the nozzle in order to direct blow-off gas across the powder feed ports. The powder port blow-offs are directed across the plasma plume to create a vortex for carrying away powder particles unconsumed by the plasma plume.