

## Title (en)

Method for surface erosion of superalloys employing a liquid jet

## Title (de)

Verfahren zur Oberflächenabtragung von Superlegierungen mit einem flüssigen Strahl

## Title (fr)

Procédé d'érosion de surface de superalliages par un jet liquide

## Publication

**EP 0750054 A1 19961227 (EN)**

## Application

**EP 96109797 A 19960618**

## Priority

US 49234495 A 19950619

## Abstract (en)

A liquid jet is employed to roughen the surface of a substrate so as to enable a subsequent thermal spray coating material to adhere tightly to the surface. The substrate is preferably a superalloy that is either nickel, titanium or cobalt based. The method initially provides a high pressure liquid jet and moves the liquid jet across the substrate surface at a rate so as to deliver liquid to the surface in a range of amounts of at least approximately 0.7 kg/cm<sup>2</sup> to approximately 5.5 kg/cm<sup>2</sup>. The high pressure liquid jet is preferably provided from a reservoir that is maintained at a pressure in the range of approximately 28 ksi to 52 ksi. A preferred embodiment employs an initial blast of a grit to the surface of the substrate to remove a smooth finish from the substrate, prior to the application of the liquid jet. The initial grit blast enables substantially lessened pressures and amounts of applied liquid mass to accomplish desired ranges of surface roughening. <IMAGE>

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## CPC (source: EP)

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## Citation (search report)

- [Y] EP 0618040 A1 19941005 - FUJI VALVE [JP]
- [YA] EP 0568315 A1 19931103 - PROGRESSIVE BLASTING SYSTEMS I [US]
- [A] FR 2413225 A1 19790727 - METALLISATION STE NOUVELLE [FR]
- [A] US 5128172 A 19920707 - WHITTICK THOMAS E [CA]
- [A] DE 4032862 A1 19920416 - BERGMANN BORSIG GMBH [DE]
- [A] EP 0245602 A2 19871119 - TEVES GMBH ALFRED [DE]
- [A] EP 0509536 A2 19921021 - EDWARDS KNEISE & CO HOCHVAKUUM [DE]
- [A] PATENT ABSTRACTS OF JAPAN vol. 9, no. 172 (M - 397) 17 July 1985 (1985-07-17)
- [A] PATENT ABSTRACTS OF JAPAN vol. 7, no. 77 (C - 159) 30 March 1983 (1983-03-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 18, no. 380 (M - 1639) 18 July 1994 (1994-07-18)

## Cited by

EP1308227A1; EP1507018A1; EP1304395A1; US6739377B2; WO2007087989A1; US8209831B2; DE102006004769B4

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