Plasma spray coating with ferromagnetic powder by thermo-electric plasma equipment

Khafizov A., Valiev R., Shakirov Y. Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© Published under licence by IOP Publishing Ltd. Plasma spray coating is the most preferred and readily available method of carrying out repair and restoration works in comparison to other methods at present. Though the method of plasma spraying has been known for a long time, there are still a number of unsolved issues related to the choice of optimal deposition regimes. The thermo-electric plasma system for plasma spray coating with a liquid electrode is discussed in this article. The process and optimal parameters of plasma spray coating regimes are described.

http://dx.doi.org/10.1088/1757-899X/240/1/012041

References

- [1] Matrenin S V and Ovechkin B B 2010 Nanostructured materials in engineering (Tomsk Polytechnic University) 186
- [2] Kudinov V V 1977 Plasma coatings (Moscow: Nauka) 184
- [3] Dautov G Y, Nail K F, Viktor L, Renat G Z, Raphael G T, Fayrushin I and Kashapov R N 2013 Low Temperature plasma in the processes of functional coating preparation J. Phys.: Conf. Ser. 479
- [4] Kashapov N F and Sharifullin S N 2015 Hardening of the surface plasma jet high-frequency induction discharge of low pressure IOP Conference Series: Materials Science and Engineering 012021
- [5] Khafizov A A, Valiev R I, Shakirov Yu I and Valiev R A 2014 Steel surface modification with plasma spraying electrothermal installation using a liquid electrode J. Phys.: Conf. Ser. 567 012026
- [6] Panteleenko F I, Lyalyakin V P, Ivanov V P and Konstantinov V M 2003 Restoration of machine parts (Moscow: Mashinostroenie) 672
- [7] Heifetz M L, Gretskiy N L and Kozhuro L M 2008 Electrical pulse of overlaying coatings of ferromagnetic powders Strengthening technologies and coatings Scientific and technical journal »engineering» 3 51
- [8] Shakirov Ju I, Valiev R I, Hafizov A A and Shakirova G Ju 2011 Mnogokanal'naja plazmennaja ustanovka s jelektroliticheskim katodom Avtomobilnaja promyshlennost 2 36
- [9] Gajsin F M and Son Je E 1990 Himija plazmy 16 (Moscow: Atomizdat) 120
- [10] Valiev R I, Gajsin Al F, Gajsin F M, Gumerov A Z, Nasibullin R T, Sadriev R Sh, Sarimov L R and Khafizov A A 2014 News of higher educational institutions. Physics 57 (Tomsk: Izd-vo Tomsk State University) Some features of fine powders production of iron oxide in low-temperature plasma electric discharge with liquid cathode 66