

Method For Cladding Internal Cylindrical/curved Surface Via Microwave

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ABSTRACT

A method (100) for cladding internal cylindrical/curved surface via microwave may be provided. The method (100) comprises preparing a clad assembly (110), placing the clad assembly (110) over a refractory brick (140) and heating (150) the clad assembly (110) and the refractory brick (140) via microwaves generated by a microwave arrangement (200). The heating (106) may have a plurality of stages like a first stage and a second stage. The heating (150) step may melt clad powder (120) of the clad assembly (110) expanding a rod of silicon carbide (116) of the clad assembly (110), causing even distribution of molten clad powder (120) over an inner surface (112a) of the hollow pipe (112) and enables metallurgical bonding between the molten clad powder (120) over the inner surface (112a) of a hollow pipe (112) up to the second stage.

KEY APPLICATION AREAS

- 1.Surface engineering and cladding.
- 2.Internal pipe and tube coating.
- 3.Microwave-assisted manufacturing.
- 4.Oil & gas pipelines.
- 5.Hydraulic cylinders and industrial equipment.
- 6.Aerospace and automotive components.

POTENTIAL USES

- 1.Cladding internal cylindrical and curved surfaces.
- 2.Improving wear, corrosion, and erosion resistance.
- 3.Repair and refurbishment of pipes and cylinder liners.
- 4.Uniform metallurgical coating of internal surfaces.

5. Rapid, cost-effective internal surface modification.
6. Extending service life of industrial components.