

**LASER CLADDING, DRILLING AND SHAPING AS PRODUCTION, REPAIR AND
OVERHAUL TECHNOLOGIES FOR ROTATING MACHINERY**

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ABSTRACT

Cladding, drilling and shaping with laser radiation are processing technologies with excellent properties such as high efficiency and extraordinary quality superior to conventional ones. The laser processing technologies are demonstrated exemplarily for steel (X5 Cr Ni 18-10), Ni-super alloy (CMSX-4), and a multilayer system (base material – bond coat – thermal barrier coating) either for manufacturing or overhaul suited for rotating machinery. The experimental results are related to calculations of physical modelling including the vaporisation, the melt flow and the solidification.