

## Accepted Manuscript

Development and application of laser cladding modeling technique:  
from coaxial powder feeding up to the surface deposition and bead  
formation

O.B. Kovalev , D.V. Bedenko

PII: S0307-904X(17)30604-2  
DOI: [10.1016/j.apm.2017.09.043](https://doi.org/10.1016/j.apm.2017.09.043)  
Reference: APM 11988



To appear in: *Applied Mathematical Modelling*

Received date: 2 September 2016  
Revised date: 10 August 2017  
Accepted date: 26 September 2017

Please cite this article as: O.B. Kovalev , D.V. Bedenko , Development and application of laser cladding modeling technique: from coaxial powder feeding up to the surface deposition and bead formation, *Applied Mathematical Modelling* (2017), doi: [10.1016/j.apm.2017.09.043](https://doi.org/10.1016/j.apm.2017.09.043)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## Highlights

- New technique of 3D numerical modeling of coaxial laser cladding is constructed.
- Collision of particles with nozzle wall exerts the determining influence on a powder stream profile and bead width.
- Analysis of powder utilization rate and resulting bead profiles by varying distance from nozzle are carried out.
- The position of the particle flux focal region in the control range of laser cladding is calculated.
- A numerical simulation can predict the optimal strategy for laser cladding a continuous coating.

ACCEPTED MANUSCRIPT

Download English Version:

<https://daneshyari.com/en/article/8051865>

Download Persian Version:

<https://daneshyari.com/article/8051865>

[Daneshyari.com](https://daneshyari.com)