

## **Molten region growth on an array of cylinders on metal surface subject to a pulsed laser beam**

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**T**his study numerically investigates heating and melting of different arrays of cylinders on a metal surface subject to an electromagnetic wave or laser beam in a TM mode. The TM mode represents magnetic field to be perpendicular to the incident plane of electrical field. A systematical investigation of heating and melting of an array of nanoparticles on a surface is essentially required to understand 3-D printing and different types of plasma processing and nanotechnology. The results show that electromagnetic wave propagating along the boundary between two media leads to a distributed energy input

on the surface of the array. Free surface deformation of molten pool required more systematical understanding of complicated transport phenomena.

### **Biography**

Peng-Sheng Wei received PhD in Mechanical Engineering department at University of California, Davis, in 1984. He has been a Professor in the Department of Mechanical and Electro-Mechanical Engineering of National Sun Yat-Sen University, Kaohsiung, Taiwan, since 1989. He has contributed to advance understanding of and to the applications of electron and laser beam and resistance welding through theoretical analyses coupled with verification experiments.

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