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**Contribution of moving speed of vacuum arc cathode spot to the heat conduction process** CHIHIRO NAGASAWA, SHINJI YAMAMOTO, TORU IWAO, Master Engineering in Electrical and Electronic Engineering, Tokyo City University — Thermal spraying has been widely used because it can give various functions by coating materials on the surface. It is necessary to remove an oxide layer and form a roughness. However, the blast has problems that occurs crushing and wear of the particles, and residual grid becomes a starting point of rust and peeling. The pretreatment with vacuum arc cathode spot is focused by this problem. Cathode spot with high energy density evaporates the oxide layer and melts the bulk for roughness. However, this process is believed that surface state is changed by the power density and sojourn time because the roughness depends on the location. It remains to be elucidated the formation factor of roughness and removal process. Therefore, the models of heat conduction process and vapor mixed affected by moving speed were proposed. To elucidate the formation factor of roughness and removal process, the contribution of moving speed to the heat conduction process is analyzed. As a result, the molten depth, width, and volume depend on the moving speed.

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