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Title: Thermal conductivity of metal powders for powder bed additive manufacturing

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1. Thermal conductivities of metal powders for additive manufacturing were measured.
2. Infiltrating gas pressure and composition influence the powder thermal conductivity.
3. He infiltration yields 200% higher thermal conductivity than Ar or N₂ at 1 ATM.
4. Powder thermal conductivities depend weakly on temperature from 295 K to 470 K.
5. Gas-enhanced thermal conductivity is consistent with an effective medium model.

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