

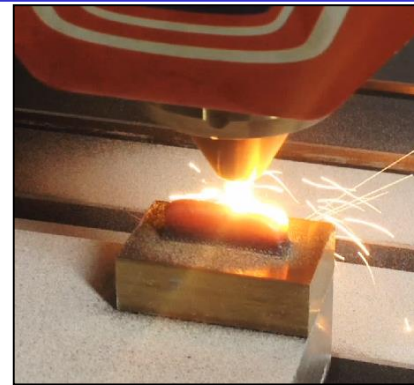


Study on Reduction and Gain of Pores in Directed Energy Deposition

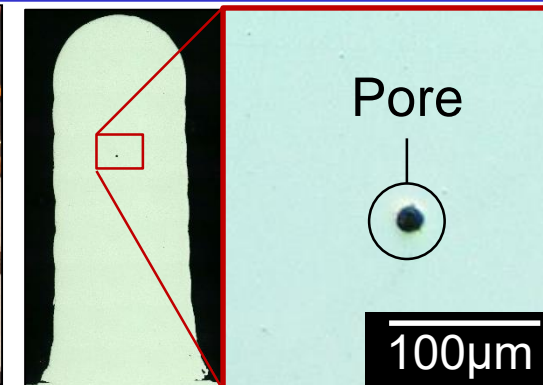
Background

熔融金属積層造形法で製作した積層物内部に空孔が生じてしまう

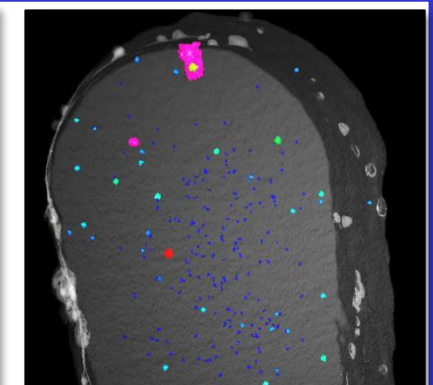
➡ 密度・強度の低下し
機械的性質に悪影響



DED



Deposit



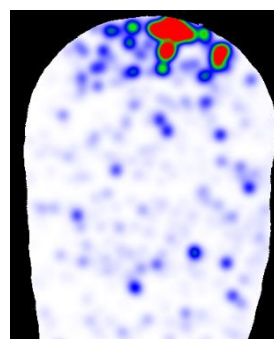
Pores

Research purpose

空孔生成要因の解明, 空孔を低減するための積層条件の導出

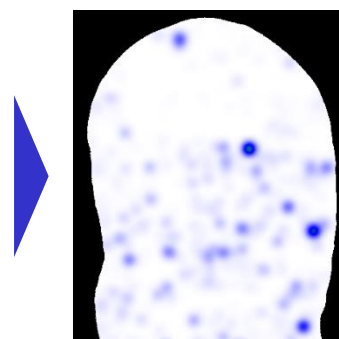
Methodology

- ◆ 空孔を低減し, 積層物の高強度化
レーザーで再溶融を行い, 高密度化



Top of deposit

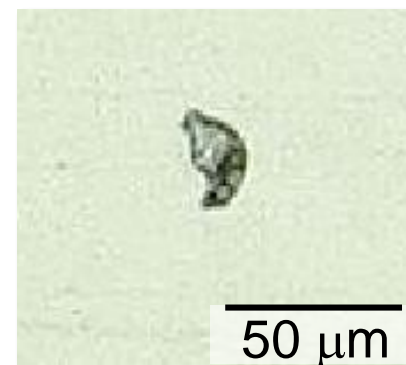
空孔率
0.032%



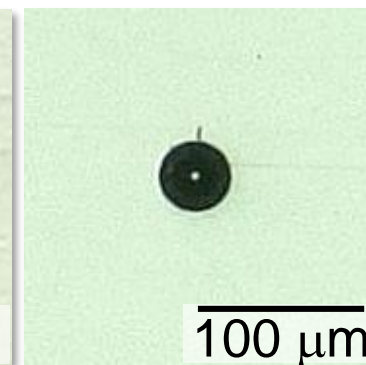
Once laser processed

空孔率
0.015%

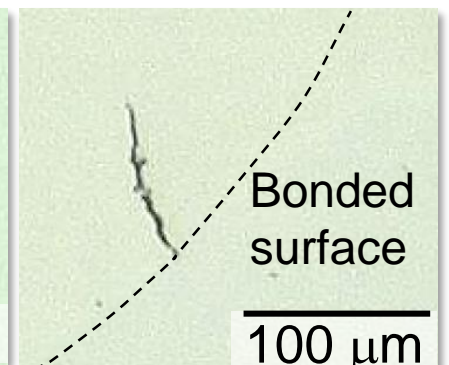
- ◆ 空孔の形状ごとに生成要因を解明



Deformed pore



Spherical pore



Crack