The 8th Asian Symposium on Advanced Materials (ASAM-8)

MICROHARDNESS EVOLUTION OF LASER-DEPOSITED EQUIATOMIC FeNiCr COATINGS IN-SITU ALLOYED WITH B_4C

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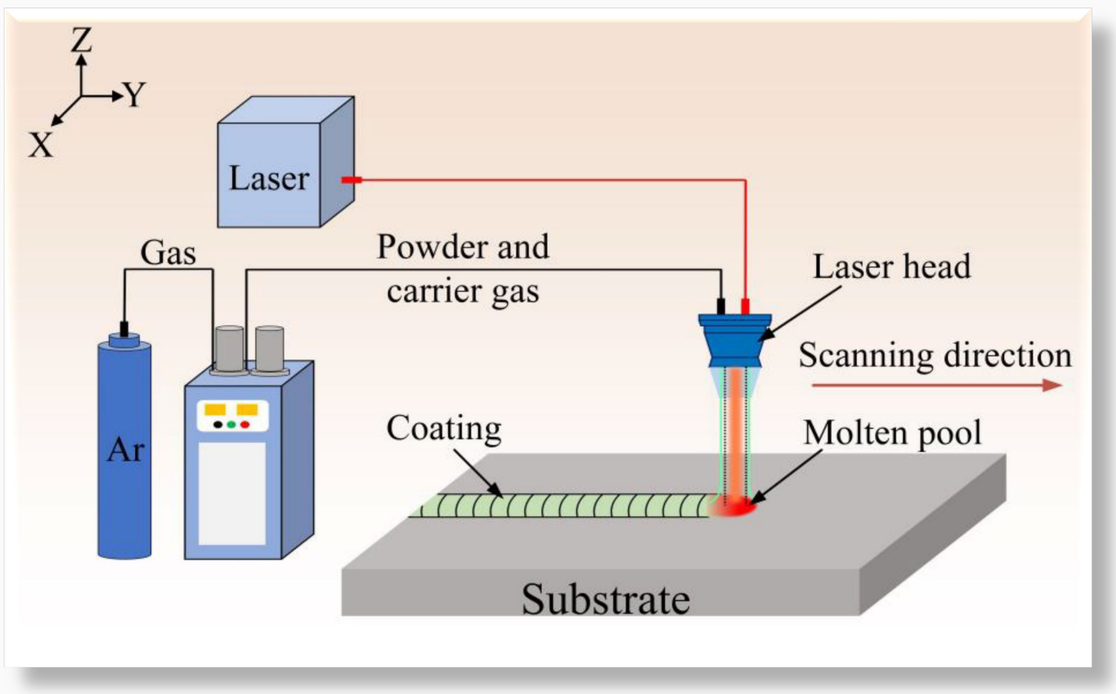
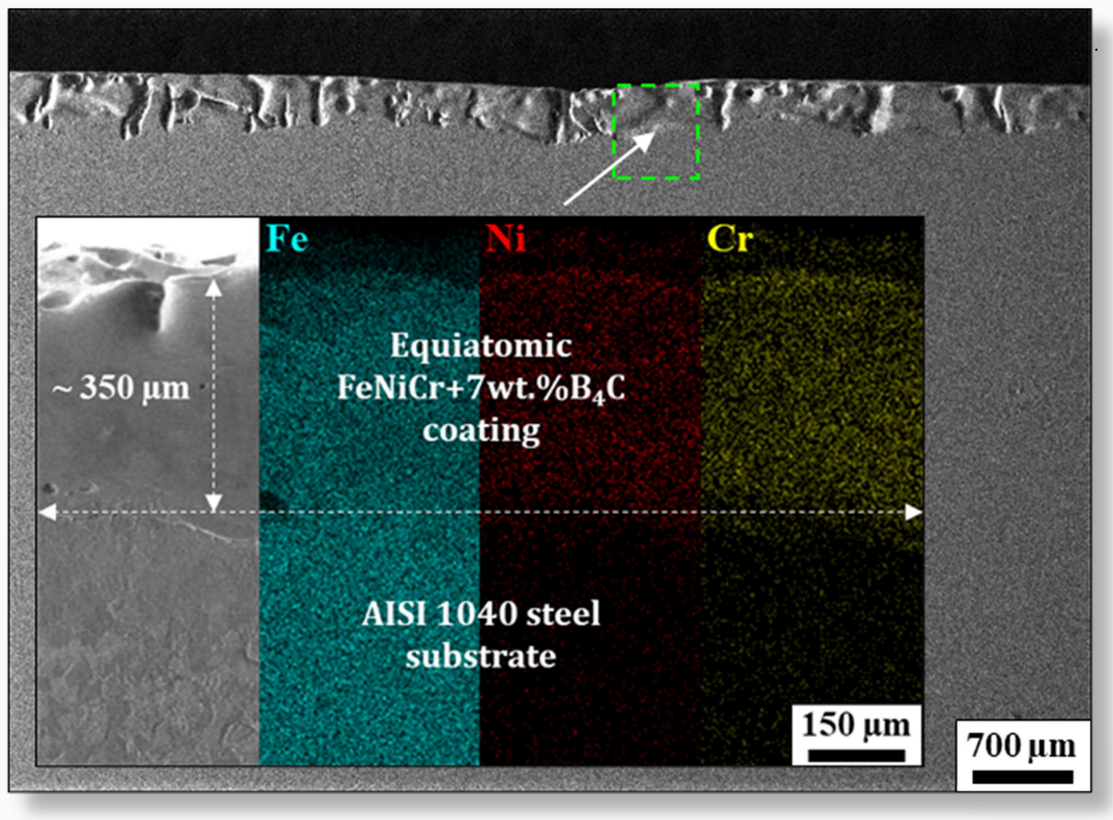
SCHEMATIC ILLUSTRATION OF LASER CLADDING METHOD

Laser cladding is an additive manufacturing process (variety of SLS technology) to form coatings on various types of metal surfaces.



THE STUDY GOAL: Evaluate the impact of *in-situ* B_4C alloying on the microhardness evolution of composite FeNiCr-B_4C coatings synthesized by pulsed laser cladding.

ELEMENTAL MAPPING OF THE SUBSTRATE-COATING AREA ON THE CROSS-SECTION OF THE FeNiCr+7wt.%B_4C SAMPLE

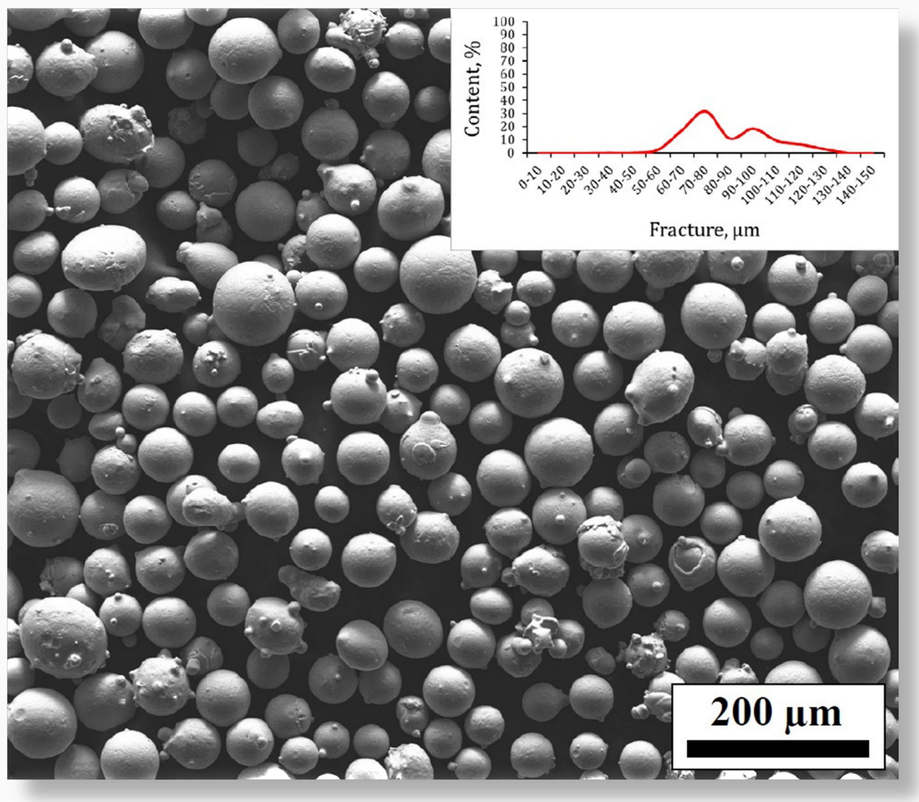


MATERIALS

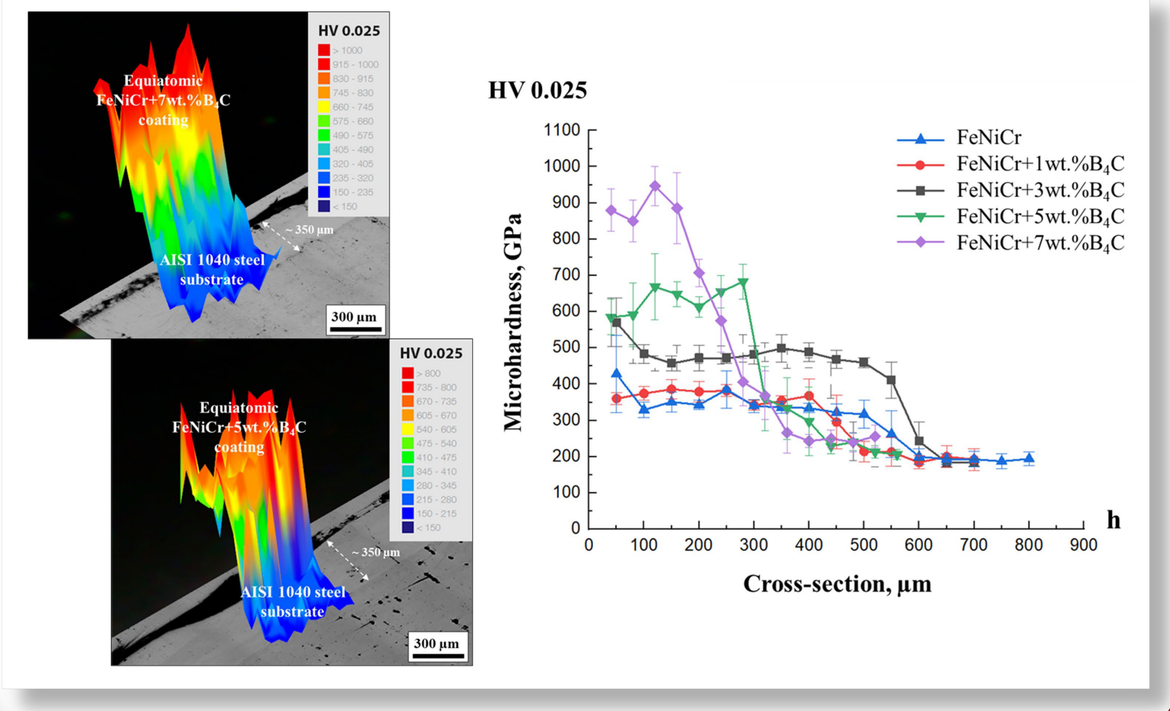
LASER CLADDING

MECHANICAL CHARACTERIZATION

CUSTOM SPHERICAL EQUIATOMIC FeNiCr POWDER



MECHANICAL BEHAVIOR EVOLUTION OF COMPOSITE FeNiCr-B_4C COATINGS UNDER MICROINDENTATION



CONCLUSION

- Laser cladding combined with *in-situ* B_4C alloying process can be considered as a promising method for obtaining strength composite FeNiCr-B_4C coatings.

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