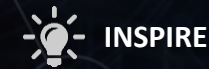
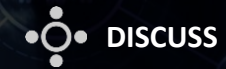




Fall Series 2021
Coating and Printing
4 Nov 2021



INSPIRE



DISCUSS



IGNITE

In Situ Characterization of Thermally Sprayed Coatings

Uroš Hudomalj

inspire

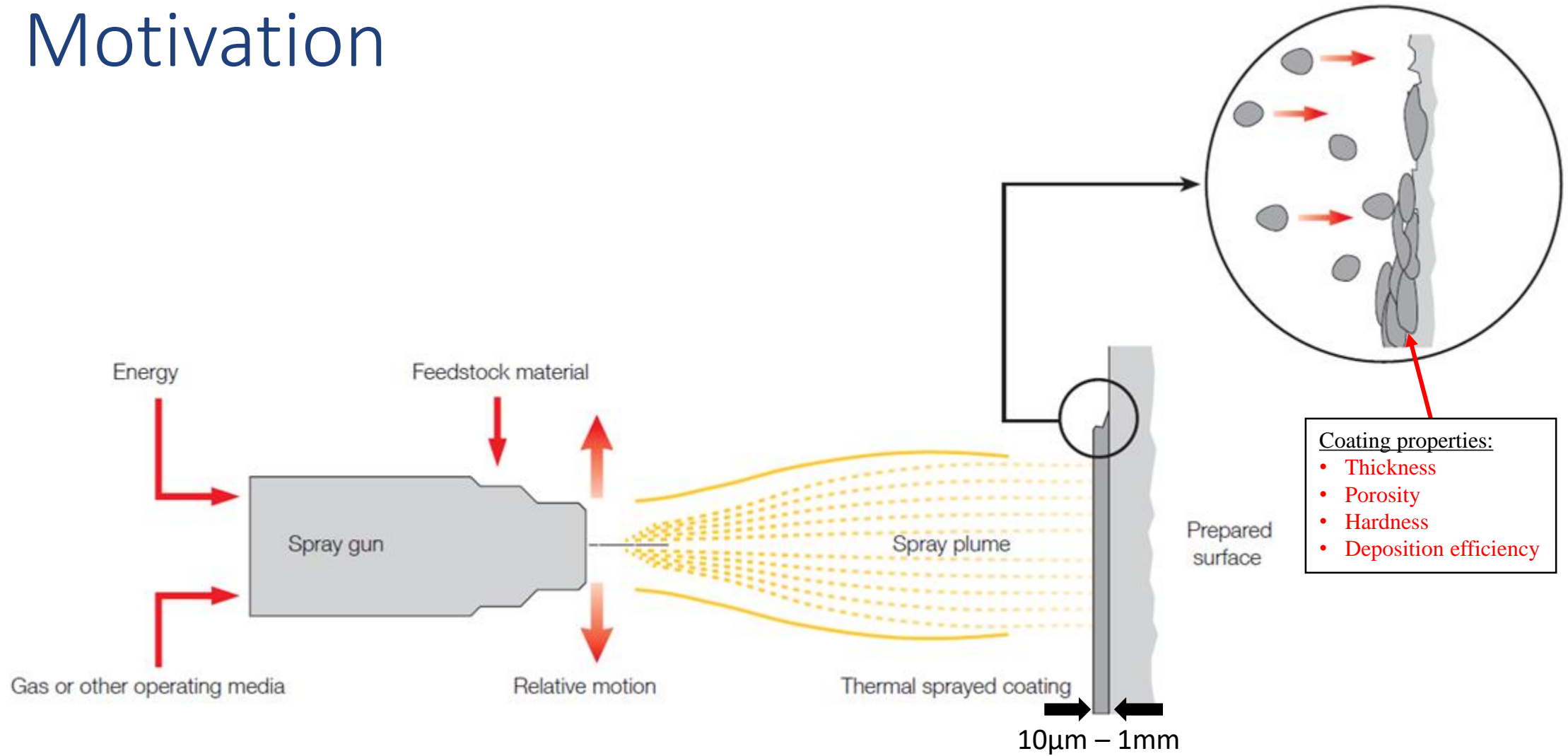
ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

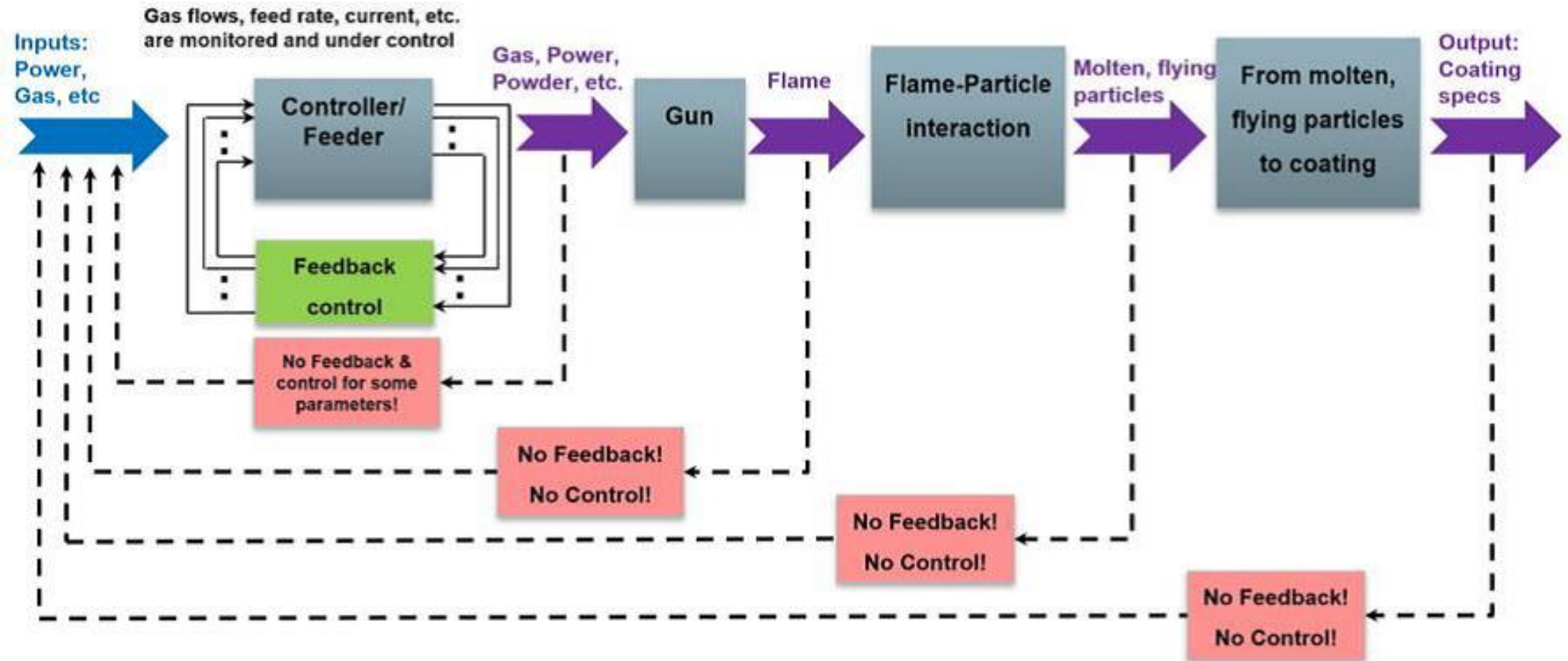
IWF

Institut für Werkzeugmaschinen und Fertigung
Institute of Machine Tools and Manufacturing

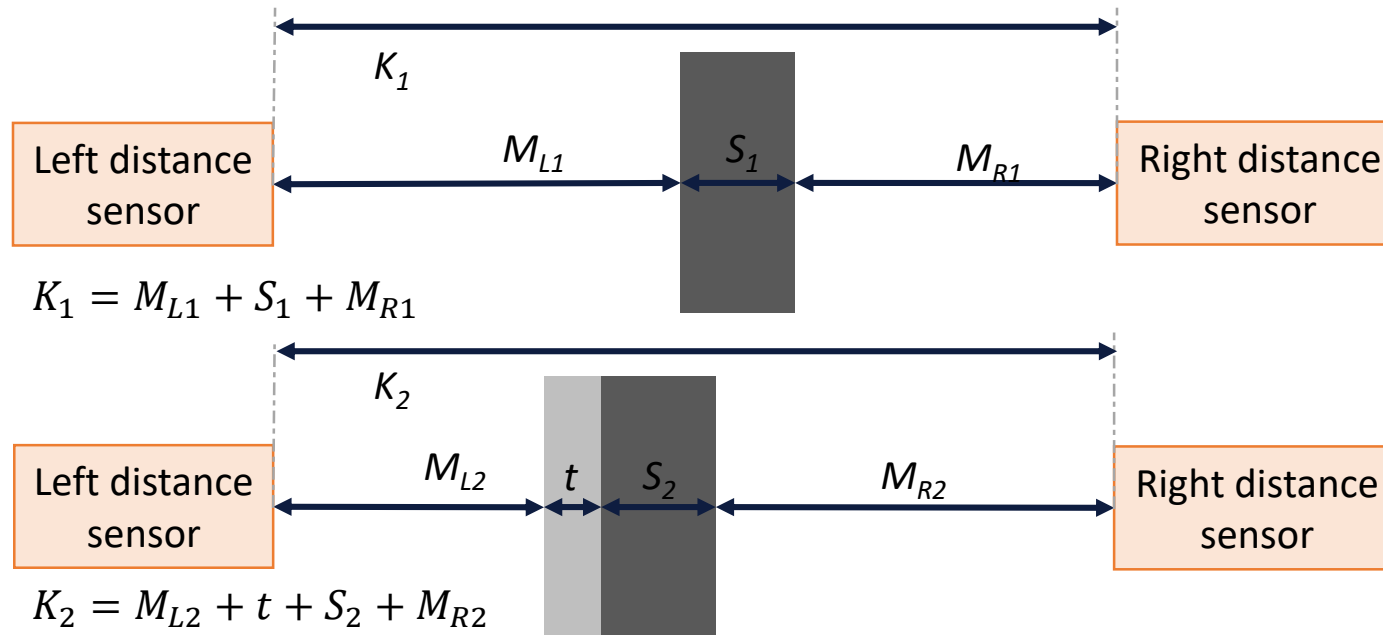
Motivation



Challenge



Challenge

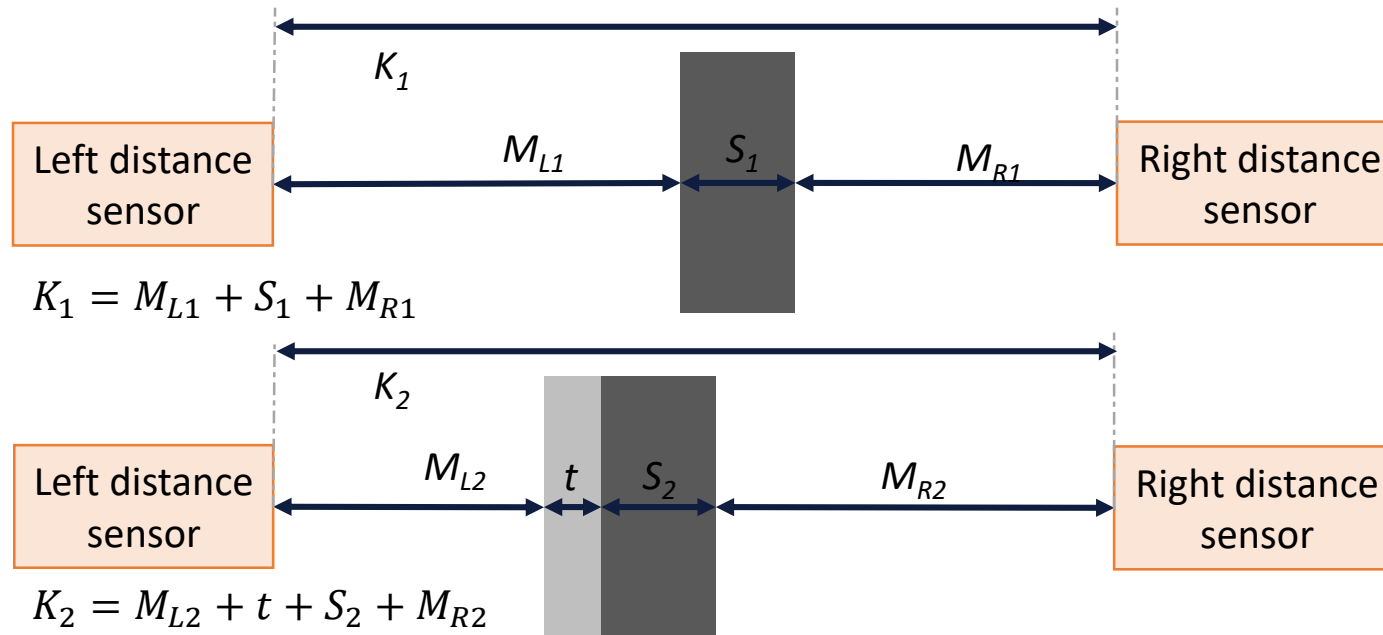


$$t = f(M_{L1}, M_{L2}, M_{R1}, M_{R2}, K_1, K_2, S_1, S_2)$$

$$= (M_{L1} - M_{L2}) + (M_{R1} - M_{R2}) + (S_1 - S_2) - (K_1 - K_2)$$

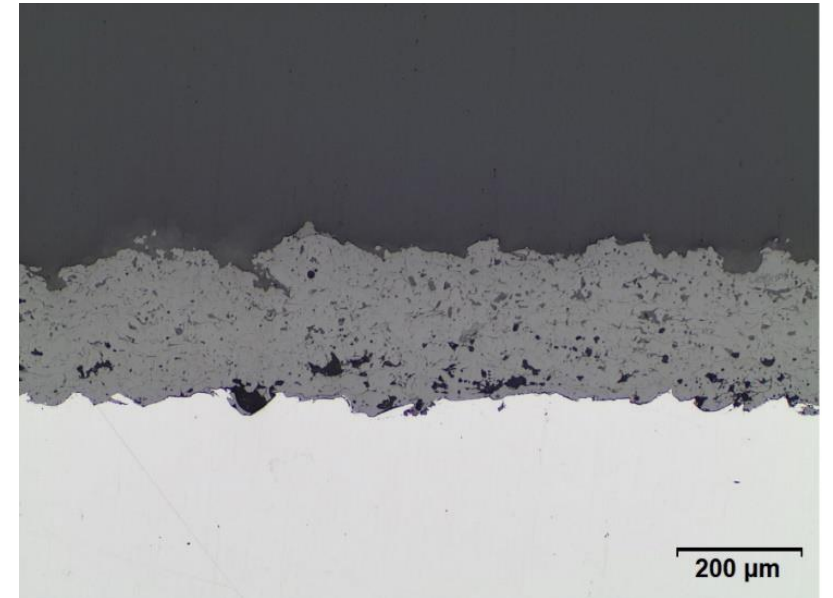


Challenge



$$t = f(M_{L1}, M_{L2}, M_{R1}, M_{R2}, K_1, K_2, S_1, S_2)$$

$$= (M_{L1} - M_{L2}) + (M_{R1} - M_{R2}) + (S_1 - S_2) - (K_1 - K_2)$$



Coatings are rough! $R_a \sim 10 \mu\text{m}$

Support

- Measure surface topography inline:
 - Investigated options:
 - High-resolution 3D cameras
 - Inline topography sensors base on interferometry
 - Budget limitations
- Possibility of inline measuring/estimating:
 - Porosity
 - Hardness

Contact

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LABORATORY 

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