

# UPSCALING A SUSTAINABLE PROCESSING ROUTE FOR NANOCARBIDE POWDERS (SAFE-N) [\[Is it a Normal Pitch\]](#)

When particle size goes down the properties get better! If you go nano, there are two issues:

- PRICE
- HEALTH & SAFETY

## ***The solution***

During the past 10 years we have done groundbreaking studies developing nanostructured metal matrix coatings using synthesis from water-soluble raw materials.

We have gained the following tangible results:

- The proof of concept – it can be done! Powder functionality has been validated in thermal spray coatings, tests with bulk components on-going (TRL 4-5 pet. pend.) Validation done with WC-Co.
- All process steps done so, that nano particles are not free.

## ***The project***

- Upscaling to industrial level (TRL 5 → 7)
- Value chain creation

***Partners already identified:*** VALMET Technologies Oy

***Wanted additional partners :***

- Research partners: safety specialist, labs with excellence in coating and powder compaction
- Industrial partners: powder manufacturer, more potential end users

# Upscaling a sustainable processing route for nanocarbide powders

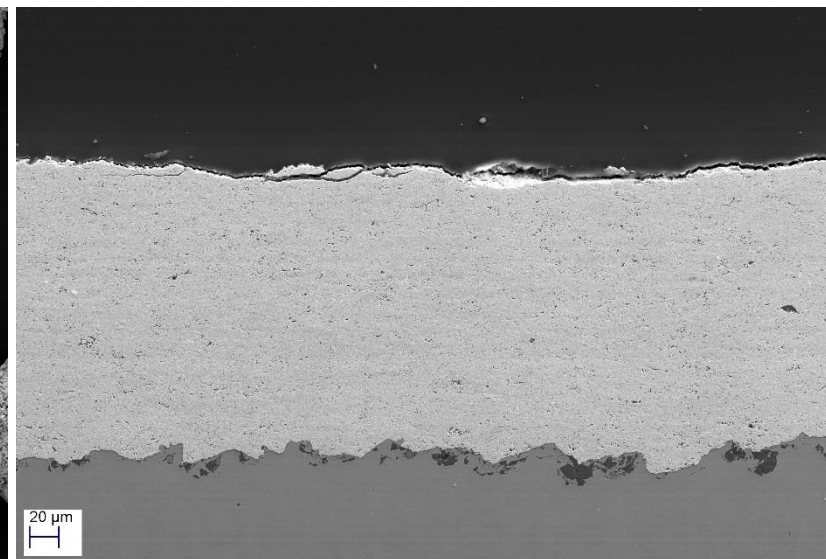
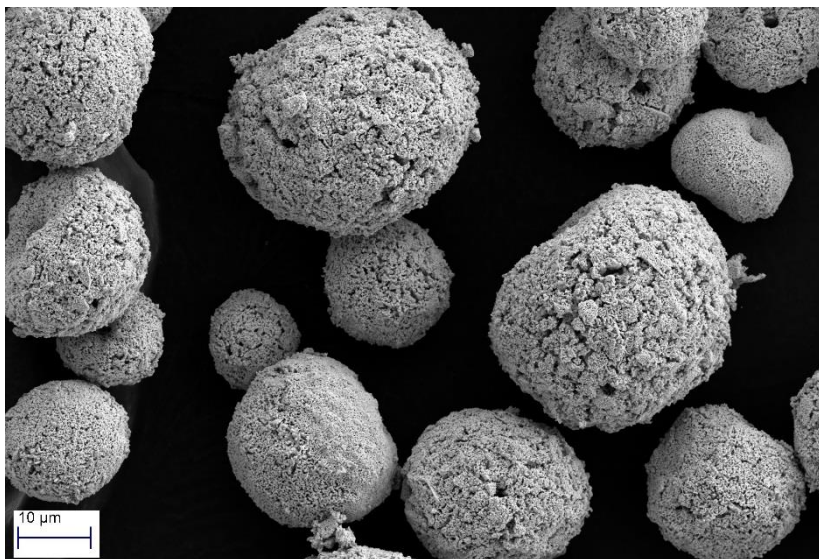
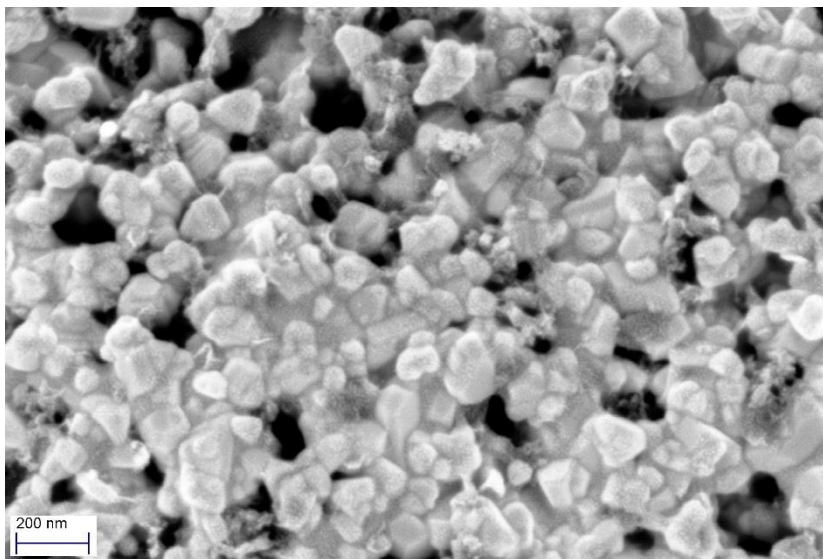
SYNTHESIS



POWDER



COATING



Marjaana Karhu, Juha Lagerbom, Kimmo Kaunisto, Tomi Suhonen, Tomi Lindroos and Erja Turunen, Nanostructural WC-Co coatings by utilizing novel powder manufacturing route using water soluble raw materials, *International Thermal Spray Conference & Exposition, ITSC 2017, June 7-9, 2017, Düsseldorf / Germany*, Proceedings of the Conference in Düsseldorf / Germany on June 7 – 9, 2017

Patent pending " Method for producing hard metal powder, and hard metal powder" Kolster reference 2161884FI