

Thermally sprayed SiC coatings (ThermaSiC)

Innovation description

- New process for thermally spraying silicon carbide (SiC) to form a wear and high temperature resistant coating.
- Developed jointly by Professor Nuria Espallargas and PhD student Fahmi Mubarok and further developed and commercialized by NTNU Technology Transfer and the new company Seram Coatings AS.



Impact

- The properties of SiC makes it highly attractive as a coating for many industrial applications. ThermaSiC enables a technologically and commercially superior coating in many cases.
- In recent media coverage the potential for the innovation is reported to be a billion business with multiple application areas.

Further development

- A new company (Seram Coatings AS) has been founded to further develop and commercialize the technology and the coatings.
- In 2015, Seram Coatings AS won Startprisen and the Academic Enterprise Awards (ACES) in Barcelona and professor Nuria Espallargas won "Best Young Innovator"

References

- <http://www.seramcoatings.com/>

Key Properties SiC coatings

- Superior corrosion and abrasion protection – also at high temperature (up to 1500° C in air and 2400° C in inert atmosphere)
- Very high hardness: up to 1900 HV (and we aim for even higher)
- High resistance against most kinds of wear types
- High thermal conductivity (superior to stainless steel)
- Low density (ca. 3g/cm³) – builds less weight to substrate
- Very attractive properties and pricing compared to CVD/PVD and WC-based coatings

see also: <http://www.seramcoatings.com/>

