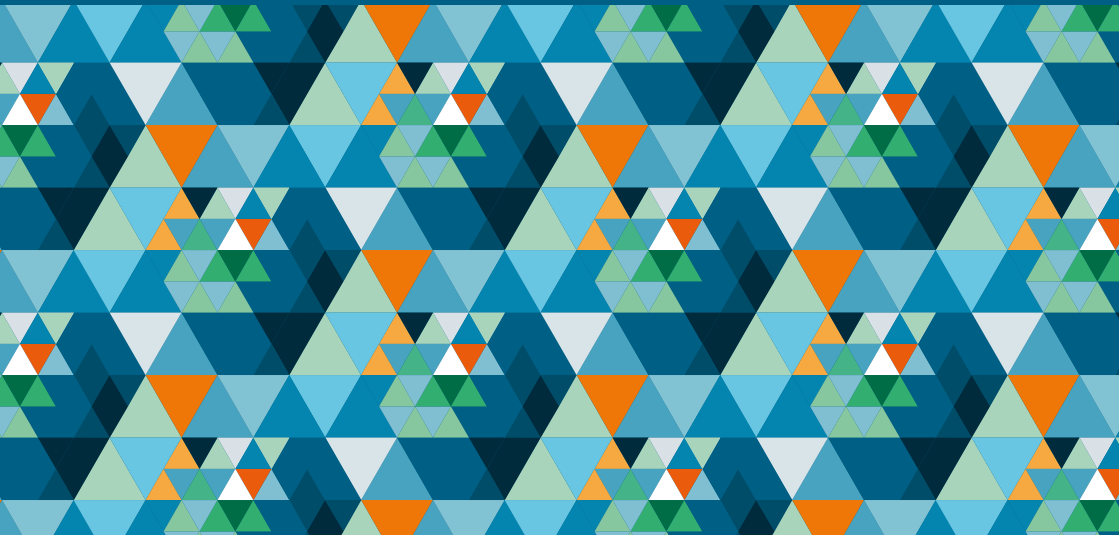


**VTT**

**beyond  
the obvious**

# VTT PowderPiloting

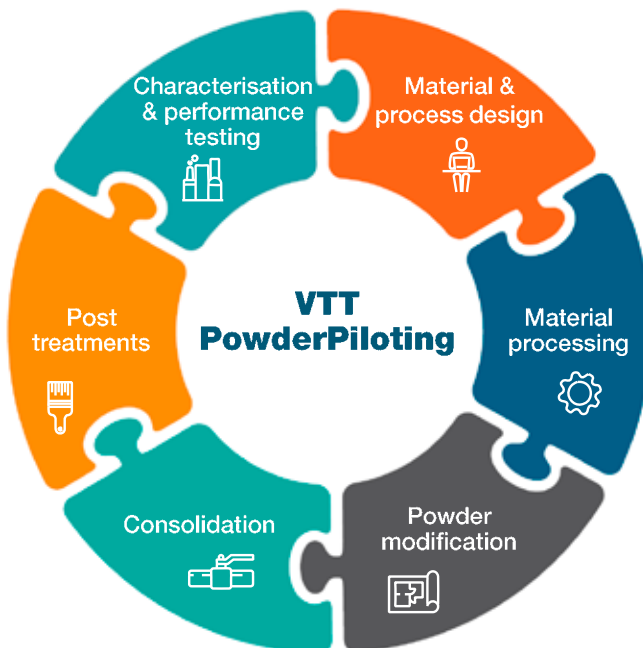
Material solutions from powder to product



VTT PowderPiloting boosts up your development from early stage feasibility studies to pilot scale production of powder based materials and components.

## Benefits

- Whole chain from raw material synthesis to component performance testing
- Verified manufacturing processes through piloting
- Reality check of ideas and inventions through feasibility studies
- Optimised cost/performance through tailored material compositions
- Material efficiency through circular economy
- Support for different stages on product process



## Material solutions

### Coatings

- Cost efficient solutions against wear, corrosion and high temperatures
- Tailoring material properties to fulfil performance criteria of harsh operation environments

### Components

- High performance components with cost-efficient and sustainable manufacturing
- Tailoring component to meet the highest demands and standards

### Functional additives

- Graded or locally reinforced structures, added functionality like integrated catalytic properties or electro-magnetic properties

### Circular economy

- Alternative raw materials based solutions
- Utilisation of secondary materials and industrial side streams

Versatile solutions,  
facilities and  
competences for  
powder based  
materials and  
components



## Facilities and competences

### Powder manufacturing

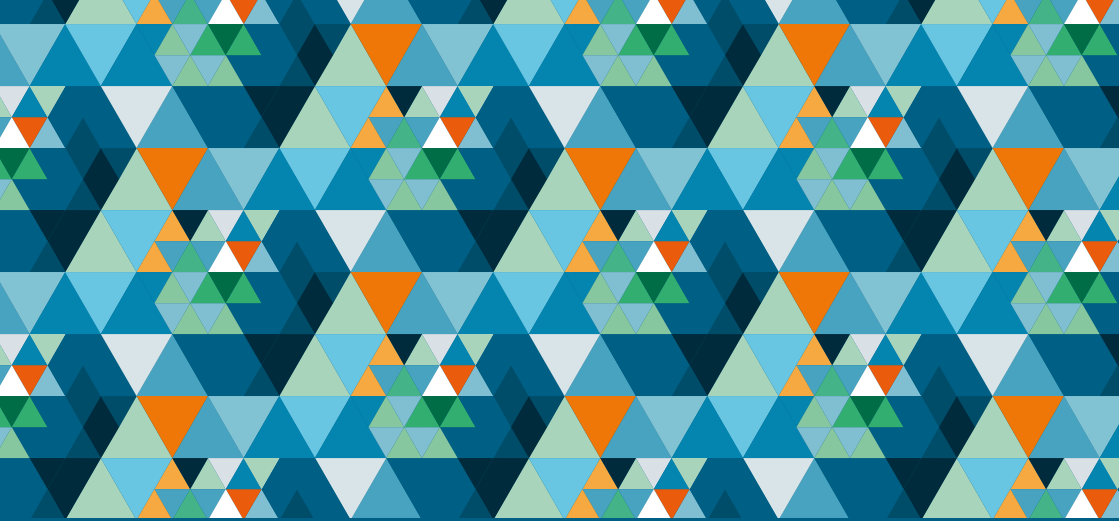
- Gas atomisation
- Spray drying
- Plasma spheroidisation
- Mechanical alloying and mixing
- Powder classification

### Powder consolidation

- Additive Manufacturing (AM)
- Hot Isostatic Pressing (HIP)
- Powder Injection Molding (PIM)
- Self-Propagating High Temperature Synthesis (SHS)
- Thermal spraying
- Laser cladding

### Post treatments and characterisation

- Heat treatments
- Surface treatments
- Performance testing and validation
- Powder characterisation and usability analysis



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See our  
references:  
[www.vtt.fi/powder](http://www.vtt.fi/powder)

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