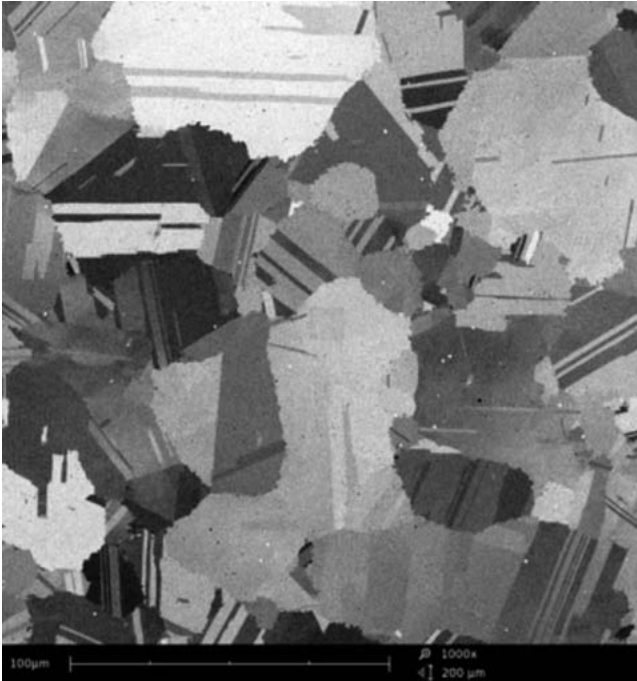


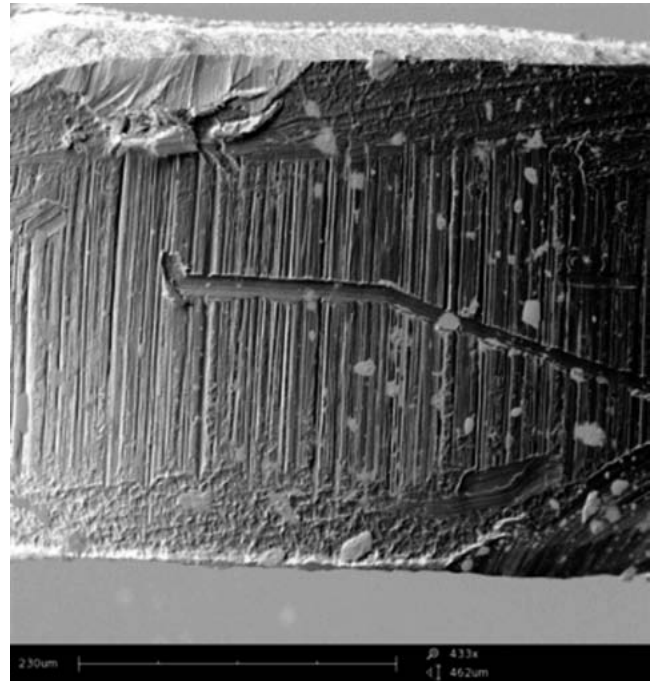
Phenom™ G2 Markets and Applications



Metallurgy



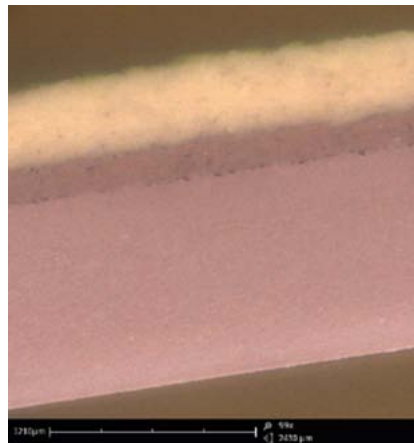
The backscatter detector of the Phenom shows an intensity difference over different materials and phases within one material. This provides information about the conditions in which the material was formed or stress that the material has been exposed to.



The topographical mode of the backscatter detector reveals all surface details of the sample such as scratches or wear and tear on this sliding contact.



To be able to image a clean cross section of sample layers, the sample has been embedded in a resin, cut and polished.

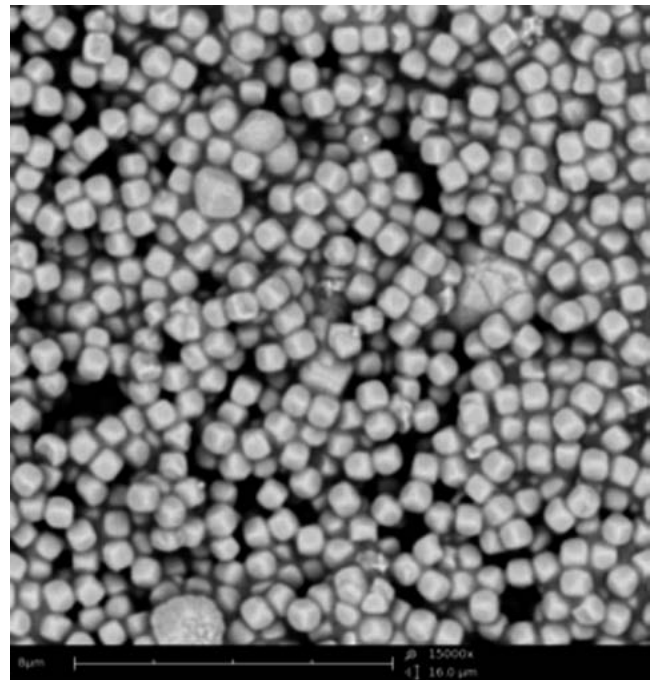
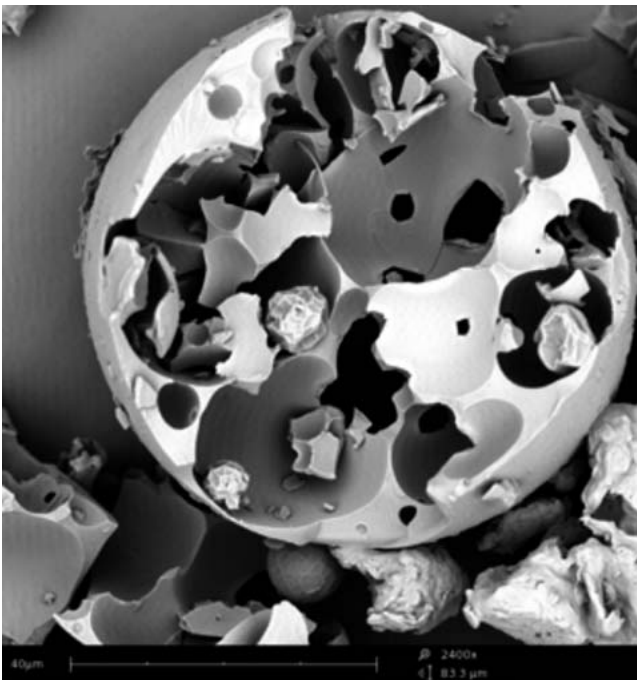
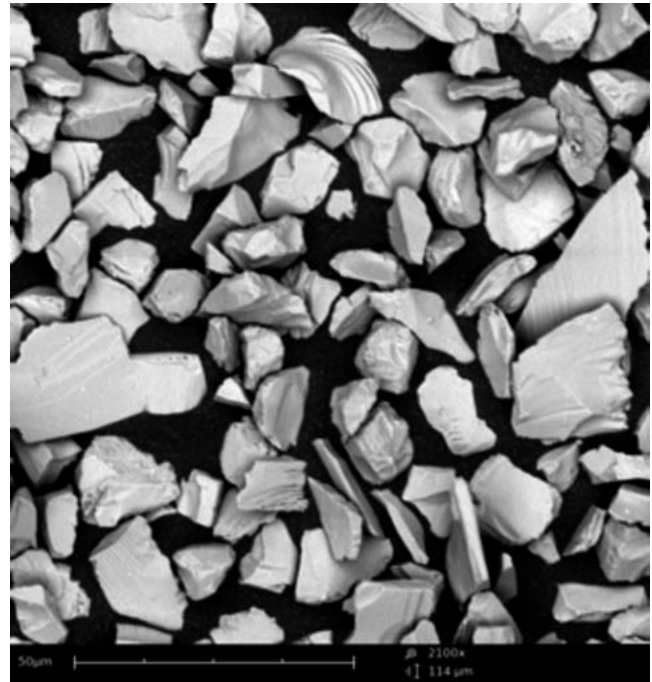
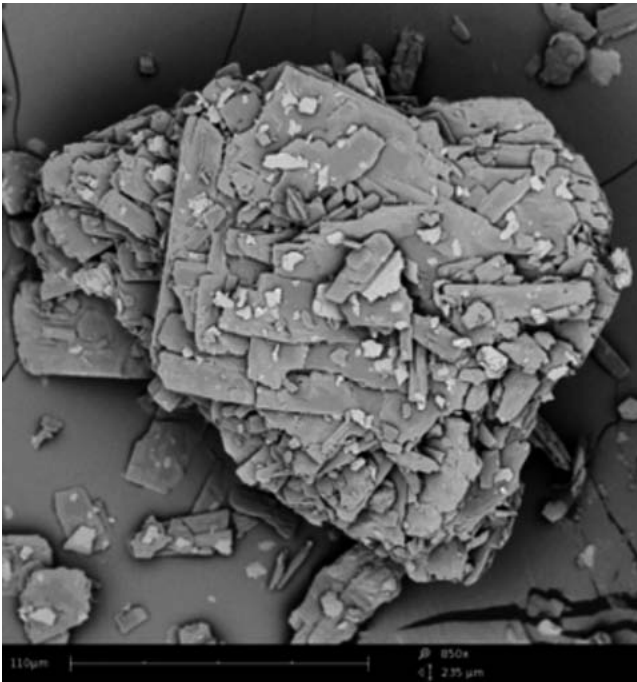


The optical image from the metallographic prepared sample is a top down image which reveals the different layers the sample consists of. Via the optical image position, it is possible to directly navigate to the desired SEM position.



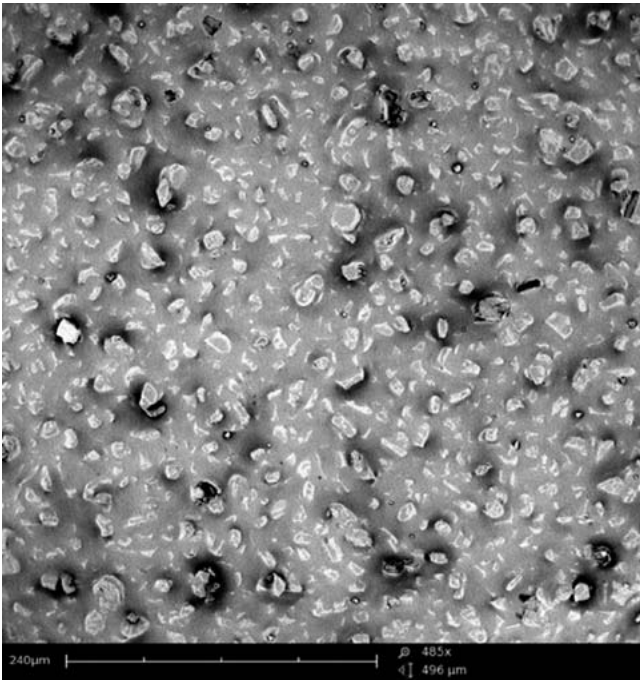
A cross section image made from plasma spray coating on steel. The coating thickness, size and distribution of porosity, oxides and cracks, adhesion to base material, interface contamination and presence of unmelted particles can be examined.

Particles

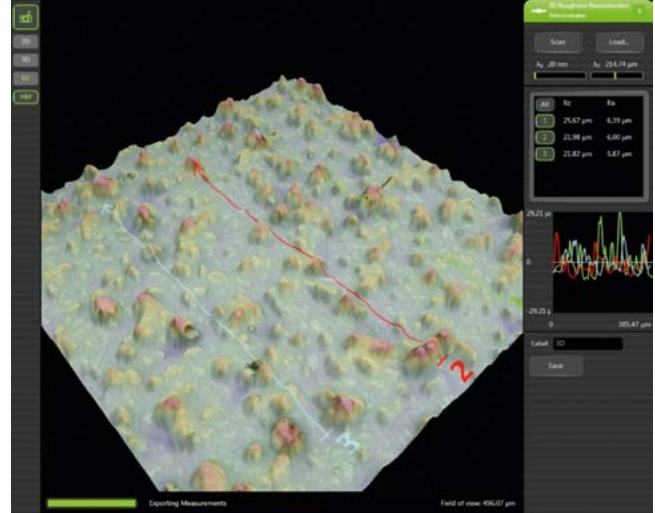


Particles are used in a wide variety of applications from pharmaceuticals to food and for creating materials such as paint and cement. Besides the size and shape of the particles the morphology tells a lot about the origin, behavior and characteristics of the particles.

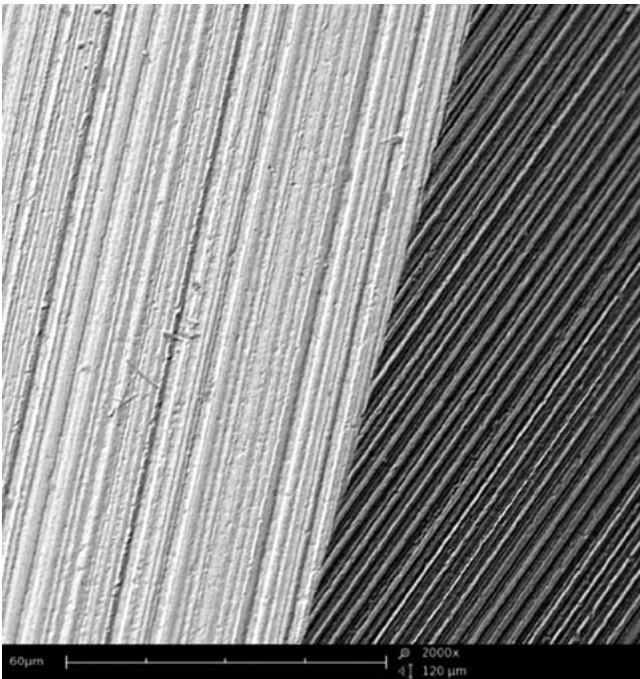
3D



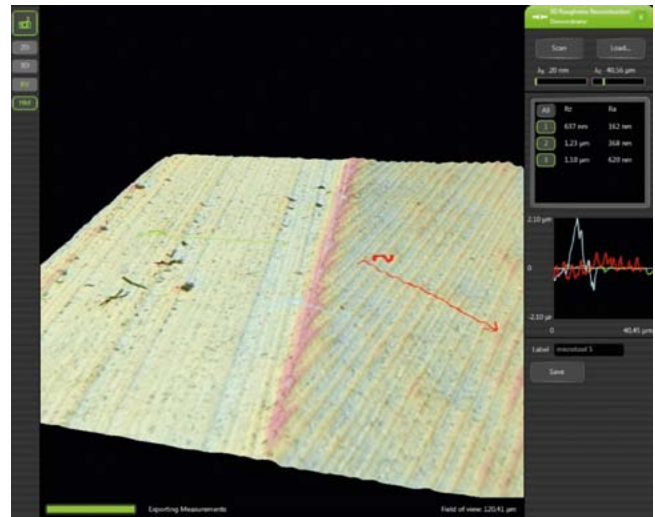
Backscattered electron (BSE) image of abrasive material.



With the 3D reconstruction the roughness of the abrasive material can be quantified and compared to the products norm.



Top down view from the cutting side of a micro tool.
The machine marks are clearly visible and give a specific surface roughness ($R_c + R_z$).



A 3D reconstruction makes it easier to retrieve height information from the sample. The average roughness and the roughness height of both surfaces is measured providing valuable feedback about the condition of the sample.

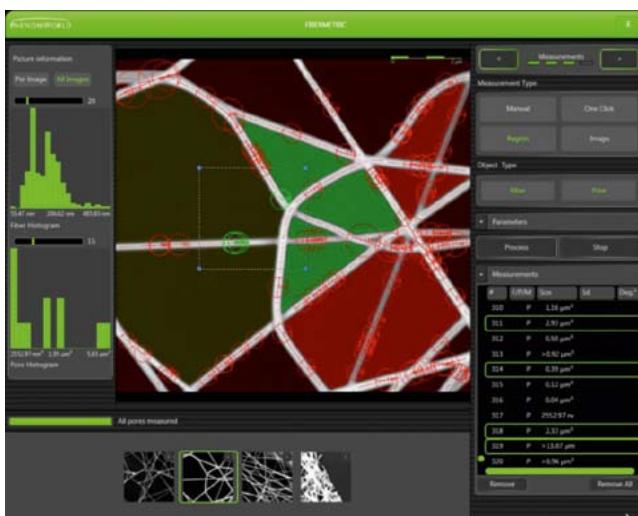
Fibers



Natural fibers come in a large variety: hair and wool are often investigated with a SEM to determine the origin and quality of the fibers.

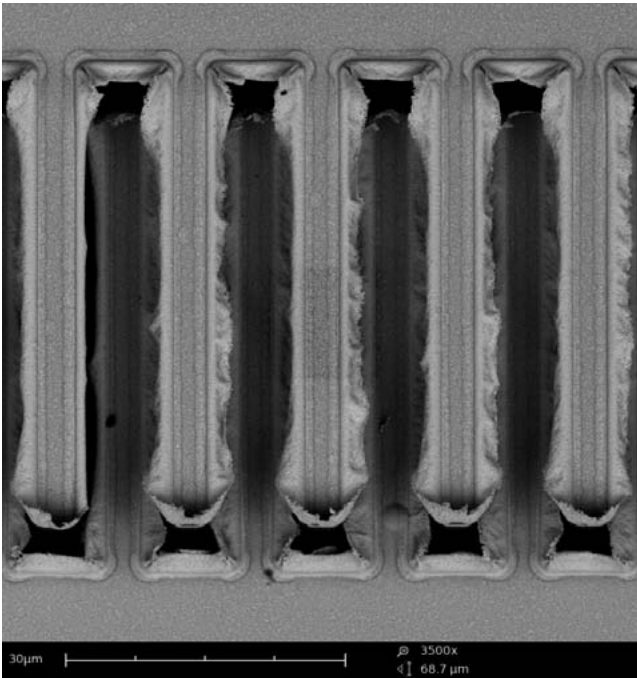


Nonwoven fibers are broadly used in the industry, a few examples are female hygiene, diapers, disposable tissues, clothing isolation and filtration.

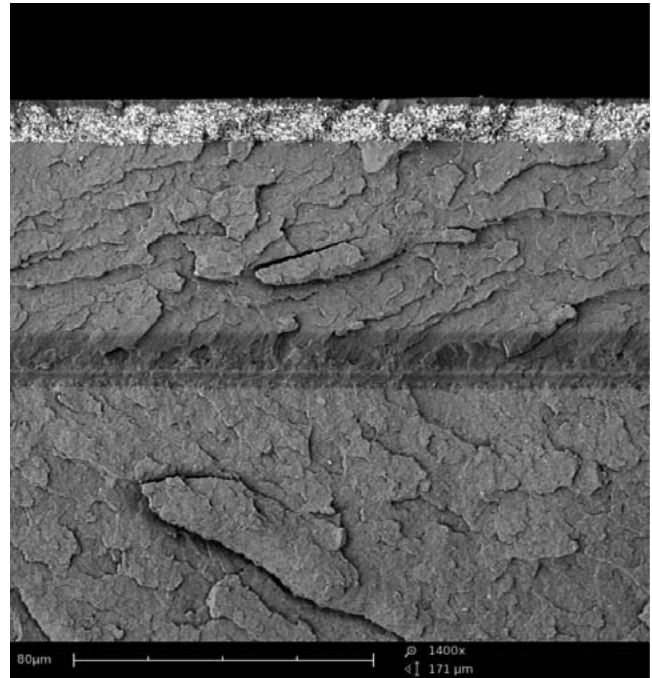


The intuitive user interface of the FiberMetric gives a complete overview of the measurements on the sample. The measurement table and histogram will give a statistical insight in the fiber sample.

Various



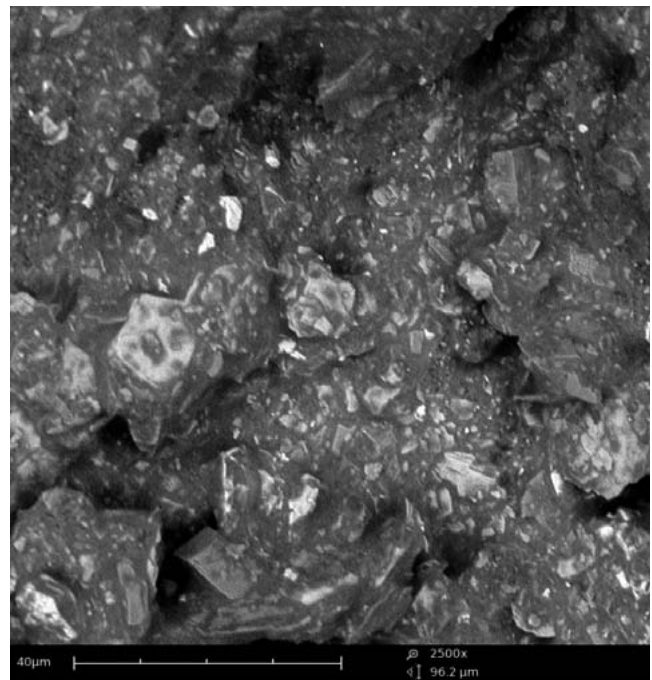
Examination of a MEMS pattern on silicon: Phenom offers the fastest way to control, inspect and modify the patterning process.



Cross section view of a credit card to examine the different layers. To create a clean cross section, the card has been broken using liquid nitrogen. This sample has been imaged by using the Phenom cross section sample holder.



Pollen trapped in a feather. A typical way nature works: flying birds and insects transport pollen to other flowers and plants. Forensics often use pollen to determine the original location of man and material.



Rubber is a so-called insulator, a material resisting the flow of electrical charge. In traditional scanning electron microscopy insulators are difficult to image. By using the Phenom Charge Reduction Sample Holder, this type of material can be imaged in its natural state without special preparation.