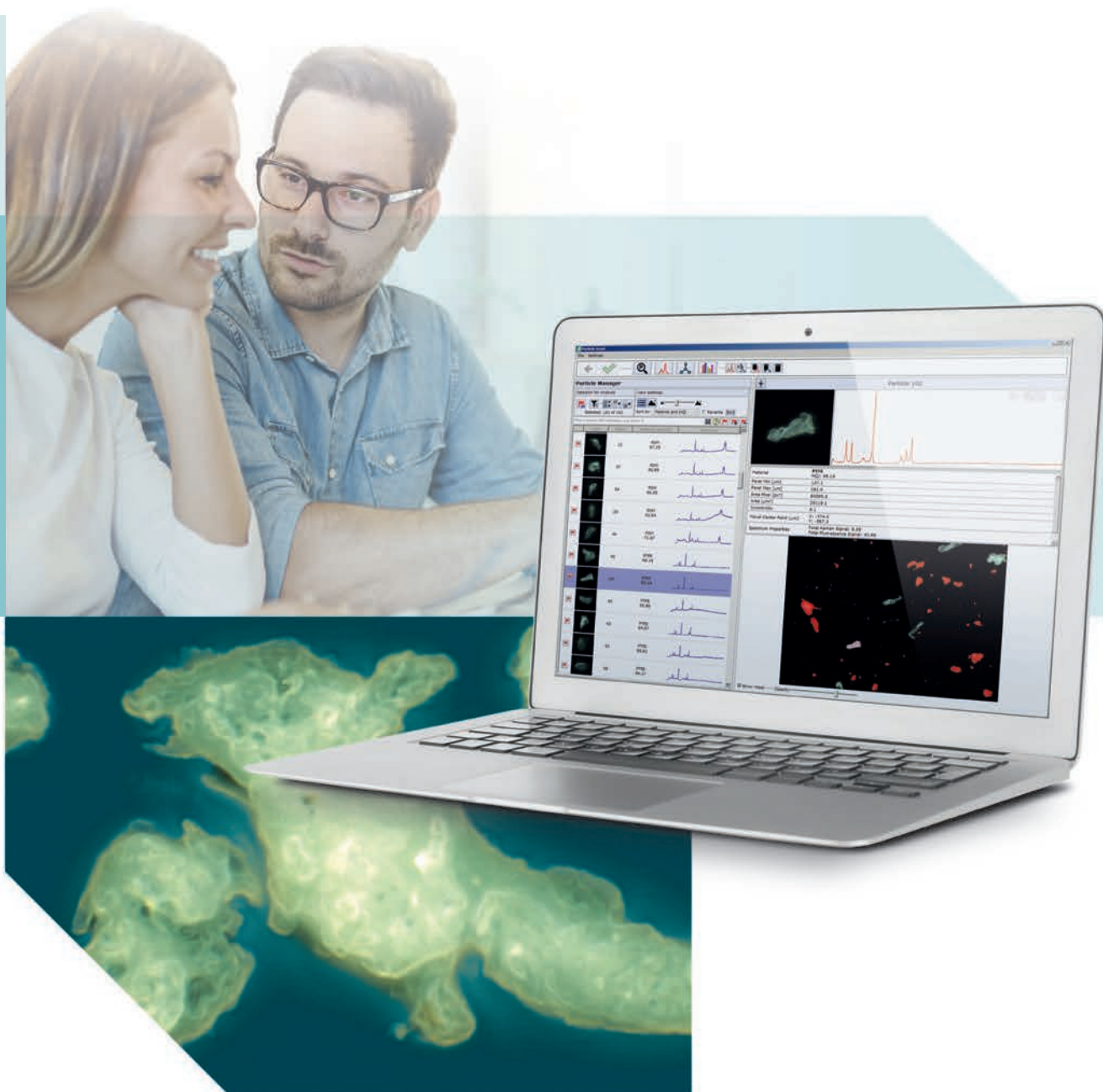


Find, Classify and
Identify Particles

WITec ParticleScout



WITec ParticleScout

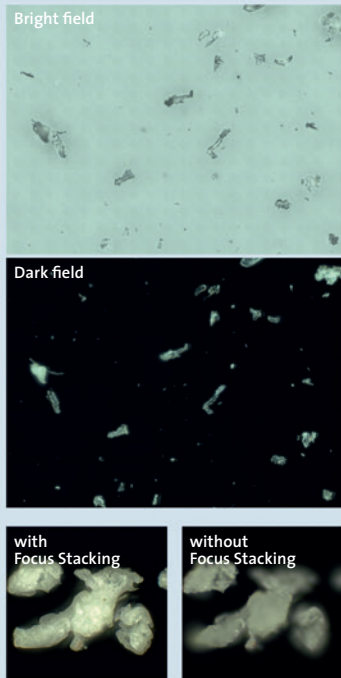
Find, Classify and Identify Particles

ParticleScout is a Raman imaging tool that can identify, quantify, classify and analyze particles in a sample. It enables measurements that move from an overview survey through targeted investigations of particles grouped by attributes to the precise chemical characterization of individual particles. ParticleScout leverages the speed, sensitivity and resolution of WITec's Raman imaging microscopes to ensure quick and seamless particle analysis.

High-resolution investigations of particles are becoming increasingly important in fields such as environmental science, pharmaceutical research, medical device development and many others. ParticleScout makes full use of Raman imaging's advantages in fast, label-free and nondestructive chemical characterization. Combined with WITec's TrueMatch database management software, a researcher can build a catalog of particles based on their constituent molecular components linked to physical attributes such as size or aspect ratio and produce a report that quantifies specific particles in a sample.

-
- **Enhanced sample survey and particle visualization capabilities: Image Stitching & Focus Stacking**
 - **Advanced differentiation of particles by their shape and size**
 - **Automated Raman chemical characterization**
 - **Accelerated component identification with TrueMatch spectral database management software**
 - **Comprehensive report generation**





01 Sample Survey

- Bright field/Dark field
- Selectable objectives for sample survey and Raman measurements
- Image Stitching for large-area overview
- Focus Stacking for sharp & defined particle outlines

02 Categorization of Particles

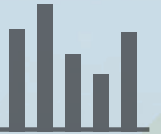
- Selection by physical shape and size (wide-ranging particle properties accessible)
- Application of Boolean filters for precise grouping
- Automated mask creation for subsequent Raman analysis



	Σ	6 - 10µm	10 - 20µm	20 - 50µm	50 - 100µm	> 100µm
PS	89	47	12	8	17	5
POM	59	34	12	8	4	1
PET	217	106	70	20	17	4
PC	87	18	45	17	7	0
PTFE	913	417	297	103	77	19
Unknown	150	45	78	8	19	0
Σ	1515	667	514	164	141	29

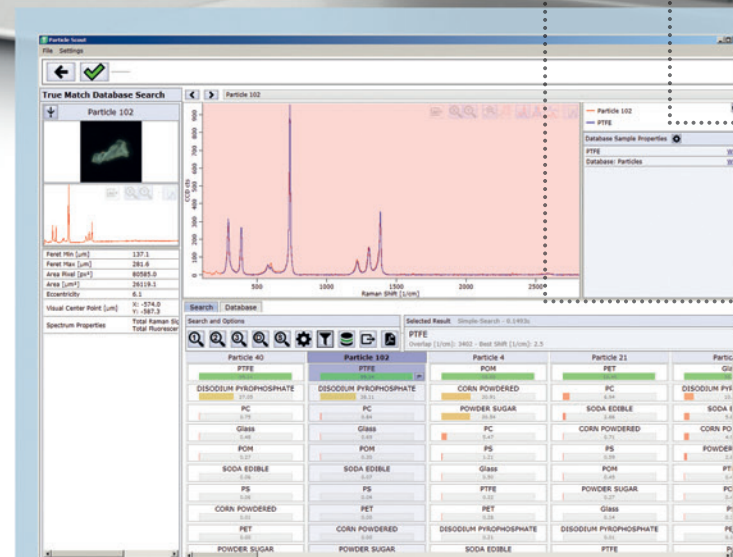
04 Report Generation

- Quantification of particles by category
- Creation of table linking quantities and/or particle properties to molecular composition
- Filters enable more precise conclusions



03 Identification

- Automated Raman spectral acquisition at each selected particle
- Fast autofocus procedure using Raman signal
- Post-processing with seamlessly-integrated TrueMatch database management software
- Assignment of components based on database information
- Use of extracted information in WITec Control for detailed follow-up measurements



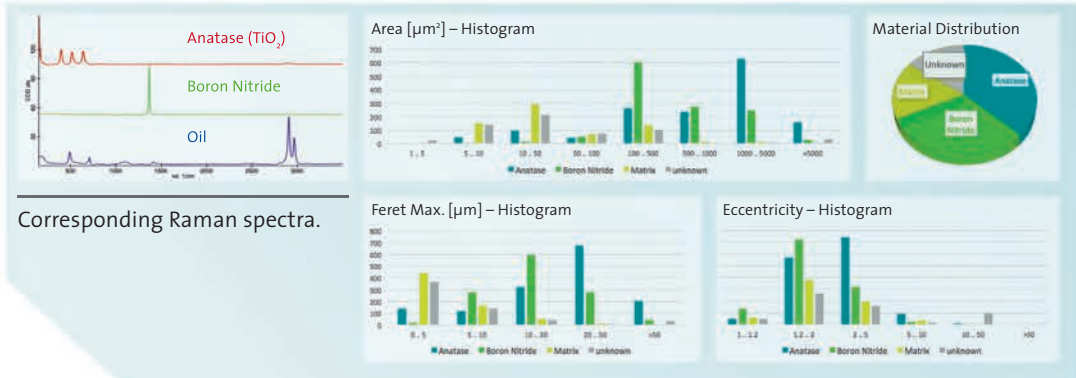
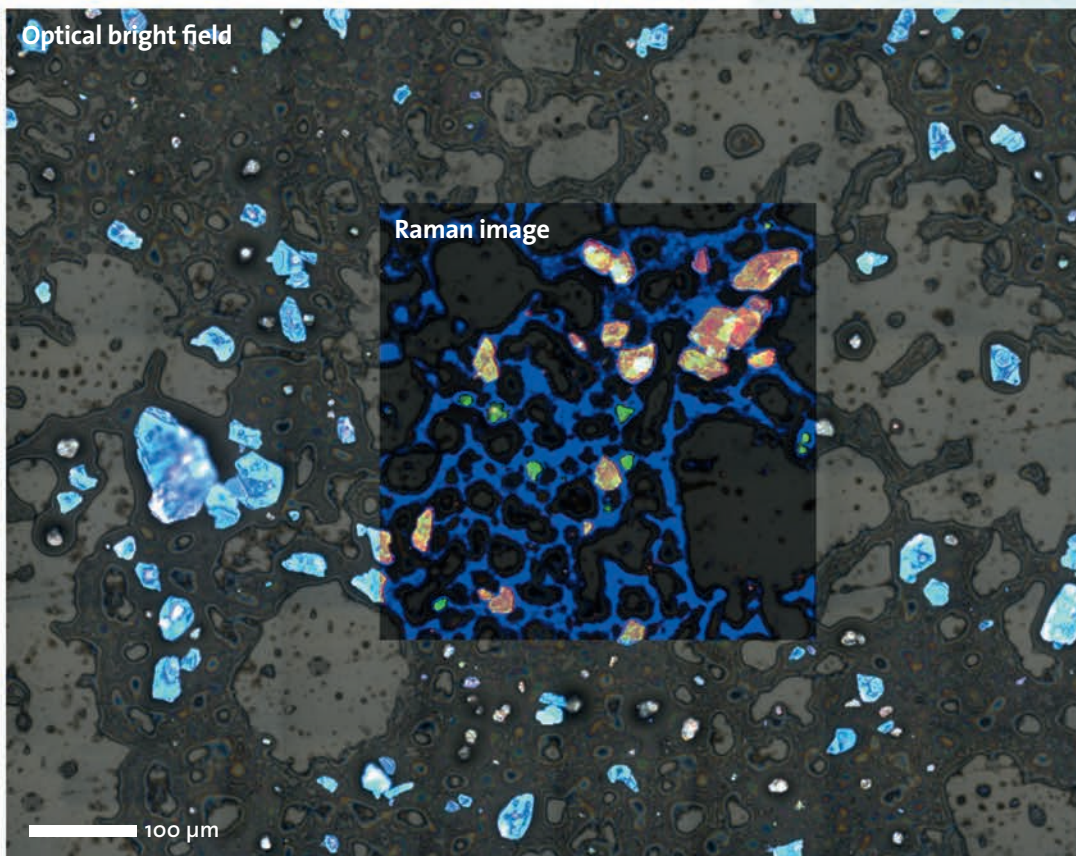
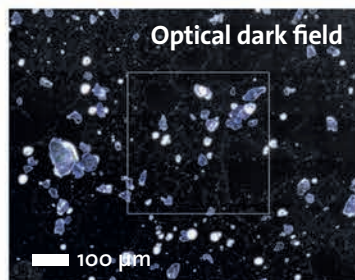
Application:
Analysis of microplastic particles



Cosmetic Peeling Cream Measurement

A cosmetic peeling cream was analyzed with ParticleScout. Using dark and bright field images, particles were located and categorized as shown in the report examples that detail their physical and chemical properties.

The sample was then investigated further with confocal Raman imaging. The overlay image shows the Raman imaging measurement within the bright field image.



ParticleScout reports describing particle properties.
(3941 particles were analyzed in this example.)



For further information about
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WITec Microscopes



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alpha300 access

alpha300 Raman-AFM

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