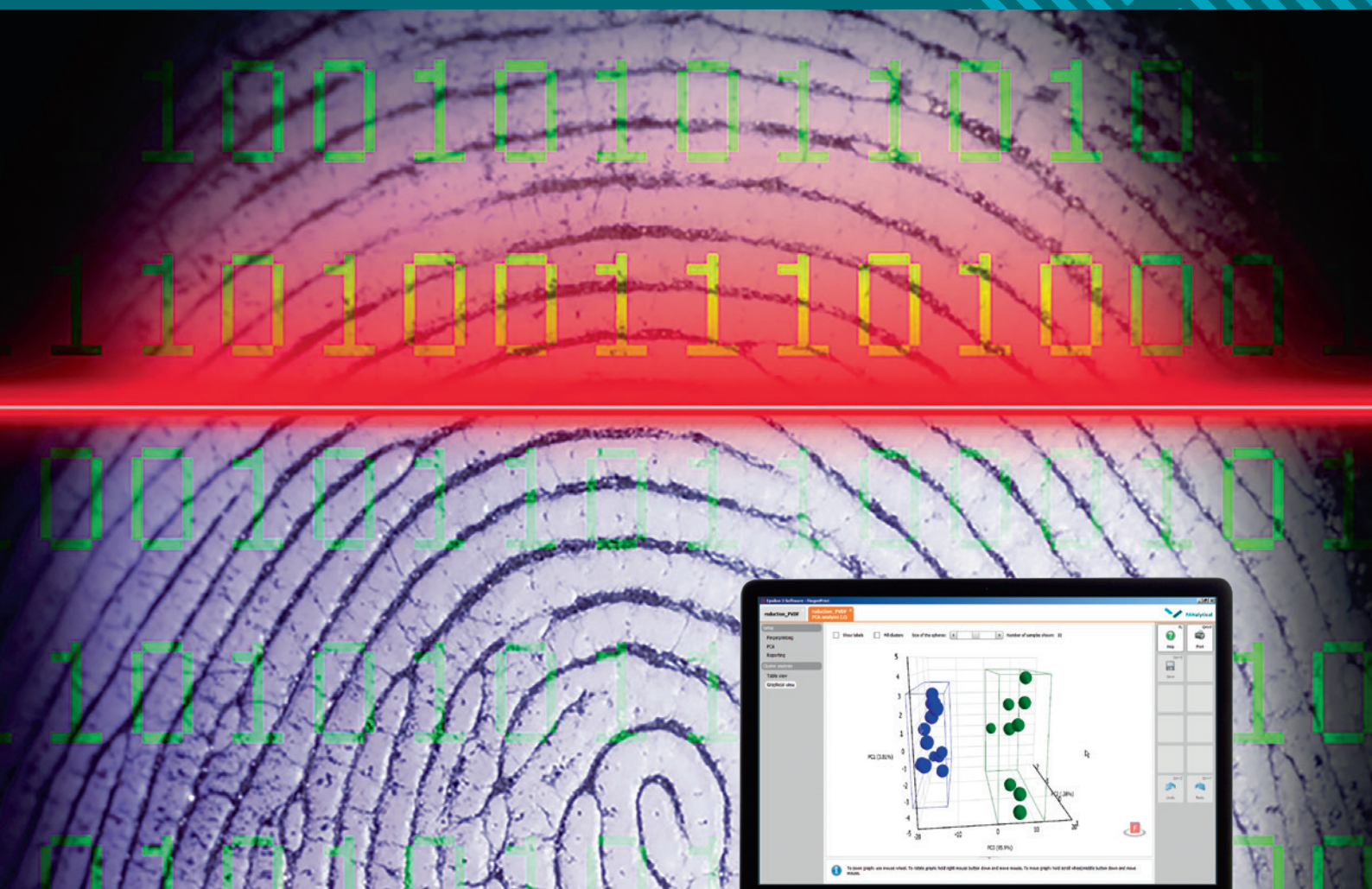# Malvern Panalytical
a spectris company

FINGERPRINT SOFTWARE

Instant material identification

MATERIAL **RECOGNITION**, **COMPARISON** AND **QUALITY CONTROL**

Capturing the subtle difference

XRF permits collection of a spectral fingerprint of a sample within minutes.

"Is this white powder what it claims to be on the product label?"
"To which type of metal does this sample belong to?"
"Is this a counterfeit product?".
FingerPrinting generally involves little to no sample preparation and is non-destructive.

INDUSTRIES

- Cement
- Cosmetics
- Food
- Forensics
- Metals

- Minerals
- Mining
- Petrochemicals
- Pharmaceuticals

Benefits
- Little or no sample preparation
- Fully automated method
- Simple true false answers
- No need for expert interpretation
- Flexibility to handle a wide variety of sample types

FINGERPRINT **WEAR METALS** IN LUBE OILS

Can you predict when machines at remote places need maintenance?

With the combination of Epsilon 4 and FingerPrint, you can monitor small changes in lubricating oils.

No elemental concentration is needed as input.

Candidate list	Sample match?	Chi^2 value
Contaminated oil	Yes	0.24
Engine problem	No	16.83
Additive Zn	No	27.71
Sand + dust	No	41.10
Piston problem	No	89.96

HOW IT WORKS

In just 3 steps, you have the answer to your question!
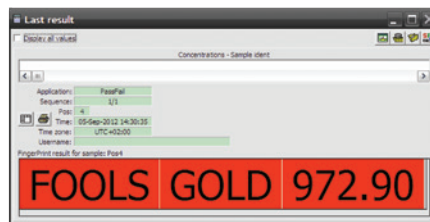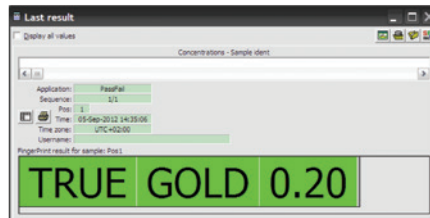

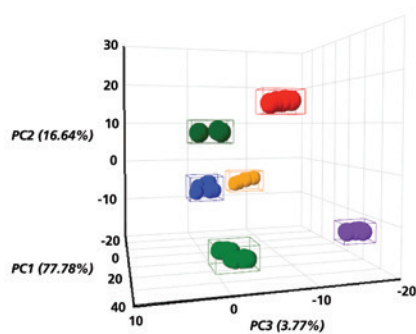**1**   **PREPARE**
your sample for analysis

2   **MEASURE**
your sample. The sample is matched
against sample(s) in your database.
The certainty of the match is declared
by a Chi^2 value: the smaller the value
the closer the agreement between
samples.

3   **VIEW**
The results are automatically shown
as PASS/FAIL (Green/Red).

TRUE | GOLD | 0.20

FOOLS | GOLD | 972.90

Further visual inspection is possible with
PCA cluster analysis in the software.

PCA and cluster analysis for clear visualization of different
polyolefin types

FINGERPRINT & EPSILON BENCHTOP SPECTROMETERS

Epsilon 4 instruments are benchtop energy dispersive X-ray fluorescence (EDXRF) spectrometers, powered by the latest advances in excitation and detection technology. Designed to be reliable and simple to operate, they have outstanding analytical performance from carbon (C) to americum (Am) – right across the periodic table.

The **Epsilon 1** is a fully integrated energy dispersive XRF analyzer consisting of a spectrometer, built-in computer, touch-screen and analysis software. The Epsilon 1 is a star performer in the low-cost benchtop instrument class.

FingerPrint software is the second generation of PANalytical's successful material identification software for benchtop Epsilon 1 and Epsilon 4 spectrometers. The unique combination of FingerPrint software with Epsilon 1 and Epsilon 4 sets new standards for industrial and process control applications.

Advantages of XRF

XRF spectroscopy is a non-destructive analytical technique that does not require sample digestion or dilution. By avoiding the potential for inaccuracies caused by incomplete dissolution, the complete analysis offered by XRF helps ensure the accuracy and reliability of results.

MALVERN PANALYTICAL

Grovewood Road, Malvern,
Worcestershire, WR14 1XZ,
United Kingdom

Tel. +44 1684 892456
Fax. +44 1684 892789

Lelyweg 1,
7602 EA Almelo,
The Netherlands

Tel. +31 546 534 444
Fax. +31 546 534 598

info@malvernpanalytical.com
www.malvernpanalytical.com

www.malvernpanalytical.com