Dear Partners,

Xenemetrix is pleased to offer a new tip of the month entitled "Application Highlight - PIGMENT: Comparison of two sets of cosmetic samples using the X-Calibur ED-XRF spectrometer." This month's tip focuses on the use of Xenemetrix's ED-XRF spectrometer, X-Calibur, for the analysis of cosmetic products, specifically comparing two sets of samples:

- **Set 1**: Creamy makeup with Titanium Dioxide (TiO2) as the main component.
- **Set 2**: Creamy makeup with mixed Iron Oxides (FeOxides) as the main component.

The study provides an excellent illustration of the capabilities of the X-Calibur ED-XRF spectrometer in handling complex samples with high accuracy and precision.

### Application Highlight: PIGMENT

**Comparison of two sets of cosmetic samples using the X-Calibur ED-XRF spectrometer.**

**Objective:** To demonstrate the efficacy of ED-XRF for the analysis of pigment concentrations in cosmetic products, which is critical for color and consistency control.

**Methodology:** The analysis was performed using a standard procedure on a X-Calibur ED-XRF spectrometer. For each sample, a calibration curve was built based on the spectral data of the five calibration standards (four reference samples and one internal standard). The samples were analyzed in triplicate to ensure reliability and accuracy.

**Results:** The quantitative results were highly consistent across both sets of samples, indicating that ED-XRF can effectively and accurately quantify the pigment concentrations in cosmetic products.

**Conclusion:** ED-XRF offers a rapid, non-destructive, and cost-effective method for analyzing pigment concentrations in cosmetics, providing valuable insights for quality control and production optimization.

For more tips & support, please contact us at: info@xenemetrix.com

**Table 1:**

<table>
<thead>
<tr>
<th>Sample</th>
<th>TiO2</th>
<th>Fe-Oxides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set 1</td>
<td>0.019%</td>
<td>0.032%</td>
</tr>
<tr>
<td>Set 2</td>
<td>0.021%</td>
<td>0.030%</td>
</tr>
</tbody>
</table>

**Figure 1:**
- **Figure 1a:** TiO2 correlation curve (Set 2)
- **Figure 1b:** Fe-Oxides correlation curve (Set 1)

**Figure 2:**
- **Figure 2a:** Comparison of two sets of samples (Titanium Dioxide vs. Iron Oxides)

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**Dear Partners,**

Xenemetrix is a leading design, manufacture, and marketing of Energy-Dispersive X-ray Fluorescence (ED-XRF) systems and solutions, providing solutions for various industries ranging from materials science to industrial applications. Our X-Calibur ED-XRF spectrometer is a powerful tool for analyzing a wide range of materials, offering high sensitivity, accuracy, and precision.

**Xenemetrix's ED-XRF spectrometer: X-Calibur**

Xenemetrix continues to lead the market with its innovative technology and customer-focused approach. Our systems are designed to deliver state-of-the-art analytical solutions with specific tailored features to meet the needs of diverse industries.

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**Tip of the Month**

How to examine your analysis batch mode

When acquiring a large number of spectra, it is important to examine the settings used for the experiment to automatically generate and analyze the data. Below is an example of how to examine the settings:

1. Open a new batch, assign a name to the batch and set it as a 'Procedure'.
2. Choose the analysis type and settings.
3. Set the number of spectra to be acquired.
4. Add an option to save the data or create a report.
5. Run the analysis.

For more information, please visit our website at www.xenemetrix.com or contact us at info@xenemetrix.com.

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