A conversation with Bree Allen,

Vice President and General Manager at Rigaku Analytical Devices,

about the regulation of Raw Material Identification in Cosmetics using Handheld Raman

EURO COSMETICS: *Rigaku has developed a handheld analyzer that can be used to identify raw materials used in cosmetic products. Can you explain this in detail?*
Bree Allen: At Rigaku Analytical Devices, we are focused on solving material analysis challenges with innovative solutions. Manufacturers of cosmetic products increasingly need access to techniques that will deliver fast and accurate raw material identification. False claims over ingredient quality in cosmetic products and any adverse reactions, such as skin irritations caused by incorrect formulations, are a serious issue for manufacturers and increasingly strict regulatory requirements are being put in place to ensure consumer safety.
There are a number of techniques such as GC/MS and HPLC/MS that can be used for the identification of essential oils used in cosmetics such as anise, patchouli and peppermint. Although these are powerful analytical techniques, the high cost of the systems and requirement for highly skilled operators results in a higher cost per analysis. This is a really important consideration for cosmetic manufacturers; they are potentially affecting their profitability by not optimizing their raw material identification (RMID) processes.
This is where Raman spectroscopy comes into its element. Raman spectroscopy is a non-destructive analytical technique that can be effectively used for RMID of cosmetic products without damaging the sample. The use of handheld Raman analyzers enables users to accept or reject materials at the point of need rather than waiting for results from the laboratory. However, a common frustration for users of handheld Raman analyzers with a 532nm or 785nm excitation wavelength is fluorescence interference when analyzing materials such as some oils and most highly colored materials. This reduces the efficiency of the RMID process and can cause frustrating delays in the manufacturing process. Progeny™ is a customizable handheld Raman analyzer utilizing a 1064nm

Bree Allen, Vice President and General Manager at Rigaku Analytical Devices

excitation laser. Progeny can be used for the RMID of cosmetics as well as active pharmaceutical ingredients (API), excipients, nutraceuticals, finished cosmetics and pre-formulated materials and packaging. The device enables users to make immediate decisions with fast and simple PASS/FAIL results helping to achieve leaner manufacturing processes and lower costs per analysis without compromising on quality and the results from utilizing Progeny for cosmetic applications have been excellent. The powerful capabilities of its 1064nm excitation laser also means the device successfully eliminates fluorescence interference that affects other devices.

EURO COSMETICS: *What kind of packaging can the analyzer be used for?*
Bree Allen: Many analytical devices cannot measure through containers which introduces a risk that the sample could be contaminated. Progeny can measure samples through containers and packaging such as plastic bags and colored glass which means samples are not compromised.

EURO COSMETICS:*What raw materials can be identified with Progeny?*
Bree Allen: Progeny can be used to identify a range of raw materials for cosmetic, pharmaceutical and biopharmaceutical applications. For cosmetic applications, Progeny has proven to be effective for the identification of essential oils such as basil, geranium, orange and thyme in cosmetics products. With its 1064nm laser, users can easily measure colored solids, powders and liquids without fluorescence interference.

EURO COSMETICS: *How long does the analysis take?*
Bree Allen: Progeny can analyze, identify and qualify materials against specific criteria in a matter of seconds. This removes the delay in waiting for laboratory results which helps to increase productivity and efficiency in the manufacturing process.
EURO COSMETICS: *What are the advantages of Progeny?*
Bree Allen: Progeny is revolutionizing RMID analysis, giving users complete confidence in their results. With its angled display and smartphone inspired touchscreen, the user can quite literally 'point and shoot' the device at the container being analyzed while simultaneously checking the measurements with the PASS/FAIL results on screen. This helps to achieve leaner manufacturing processes and reduce costs without compromising on quality. Error free and streamlined data entry tracking is now achievable with the Progeny's integrated digital camera, electronic signature capabilities and software.
By introducing the new generation of handheld Raman technology into the RMID workflow, manufacturers can overcome their material analysis challenges and streamline workflow procedures, decrease costs and increase product quality – which is a win-win situation for manufacturers and consumers alike! ■