'SSKEP,' highly accurate, high-speed skin analyzing technology

December 3 2012

Image of Skin Analyzing Technology"SSKEP".

Sony Corporation today announced the development of "SSKEP (Smart Skin Evaluation Program), " a highly accurate, high speed technology for analyzing various elements of the skin, including texture, blemishes, pores, brightness and coloring. "SSKEP" is Sony's own skin analyzing technology which is comprised of back-illuminated CMOS image sensors that achieve high sensitivity and low noise, multiple wavelength light source controls, and skin-analyzing algorithms. The combination of advanced sensing technologies and high-speed image processing technologies will enable the quantitative and multilateral measuring and analysis of various elements of the skin.

Skin analyzing products are currently available in the beauty industry for professional and consumer use but professional products are large and expensive, while consumer products offer limited analyzing capabilities. By incorporating Sony's newly-developed "SSKEP" skin analyzing technology, manufacturers will be able to commercialize compact products that can easily analyze various elements of the skin.
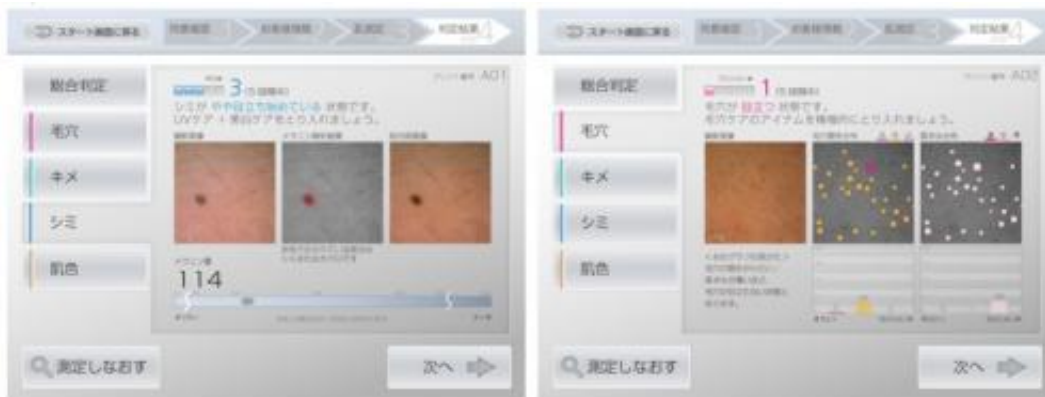

Example of skin analysis output image (Total Skin Analysis including pores, texture, blemishes and color).

In general, an important aspect of skin analysis is the ability to examine both the surface layer of the skin, which is readily reachable with visible light, as well as the layers beneath the skin, which are accessible only with near-infrared light. "SSKEP" optimally controls both the output of

multiple wavelength light sources as well as the image capturing process with the CMOS image sensor, to realize highly sensitive photography on and beneath the surface of the skin, thus enabling diverse and highly accurate skin analysis.

In addition, "SSKEP" incorporates Sony's own algorithms which enable quantitative evaluation, pixel-by-pixel analysis and visualization of skin composition through image processing and shape recognition technologies. For example, skin texture can be accurately evaluated by analyzing its shape, volume and direction. Furthermore, pigmentation on and beneath the surface of the skin can be viewed by conducting pixel-by-pixel analysis of melanin in the skin, thus enabling information to be obtained about non-visible skin, including concealed markings and blemishes.

Example of skin analysis output image (Left: melanin analysis, Right: pore analysis).

Sony anticipates a diverse range of applications for its newly-developed "SSKEP" technology in various new services and consumer-oriented products across the beauty industry and more. Accordingly, Sony will

continue to develop and enhance its skin analyzing technologies.

Sony has been contributing to the industry by developing high quality image sensors for professional and consumer digital cameras, smartphones, and more. Going forward, Sony will also focus on the 'sensing field' where information about distance from the subject as well as the subject's movements, shape and colors are readily acquired and processed. In doing so, Sony will cultivate a new market where image sensors can be utilized in all facet of everyday life.

Example of skin analysis output images at the time of the development in Japanese.

Provided by Sony