

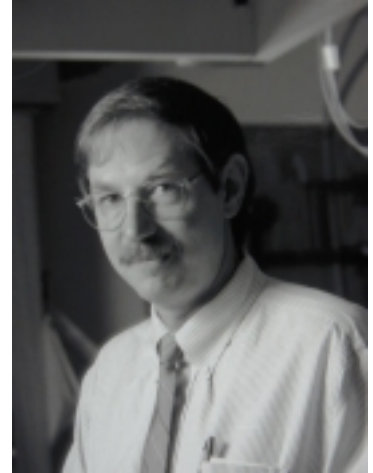
v600 and v300 Technical Basis

Written by: Rox Anderson, MD

The physical basis for skin appearance is reflectance of light. Fundamentally, there are two processes that return light from the skin, and therefore two different components of skin reflectance. Each component carries different diagnostic information, but we normally see them mixed together. By separating the components of reflectance, the Syris v600 allows enhanced viewing into the skin, and of the skin surface.

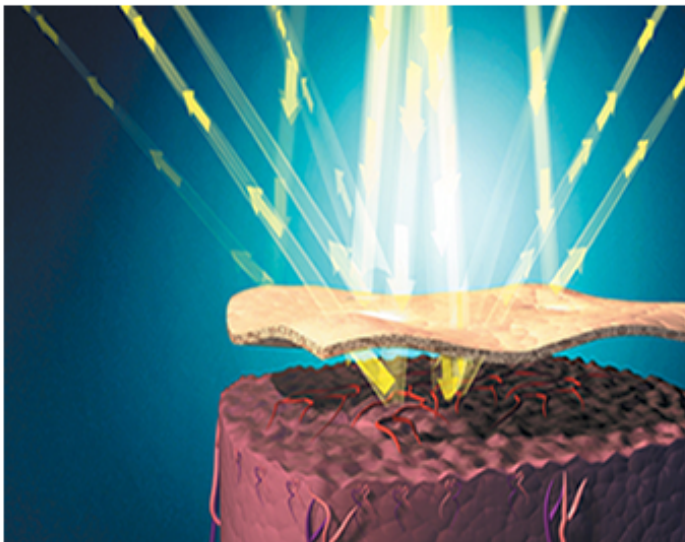
When light encounters the skin surface, about 5% is reflected because the refractive index of skin is much higher than that of air. Similar to reflection off the surface of water, this component carries information only about the shape and texture of the skin surface. The remaining 95% of light enters the skin, where it encounters structures that either scatter or absorb the light. Some of the light is scattered back out of the skin. This back-scattered component carries all of the information about internal structures such as blood vessels, pigmentation, hair follicles, skin color, inflammation, etc. Polarization refers to the orientation of light waves. Back scattering scrambles polarization, whereas specular reflection does not. By using a polarized illuminating light combined with polarized viewing, the Syris v600 easily separates the two components of skin reflectance. With source and viewing polarizers crossed, the specular component is blocked, producing a greatly enhanced view below the skin surface. When the source and viewing polarizers are parallel, surface features such as texture, scale and wrinkles are enhanced.

This use of polarized light in dermatology was first described by R. Anderson in 1991 ("Polarized light examination and photography of the skin. Archives Dermatology 1991;127:1000-1005). Syris Scientific developed the concept into a practical examination system with precise, hands-free illumination. Fine procedures such as sclerotherapy are easier. Examination of pigmented and vascular lesions are enhanced.

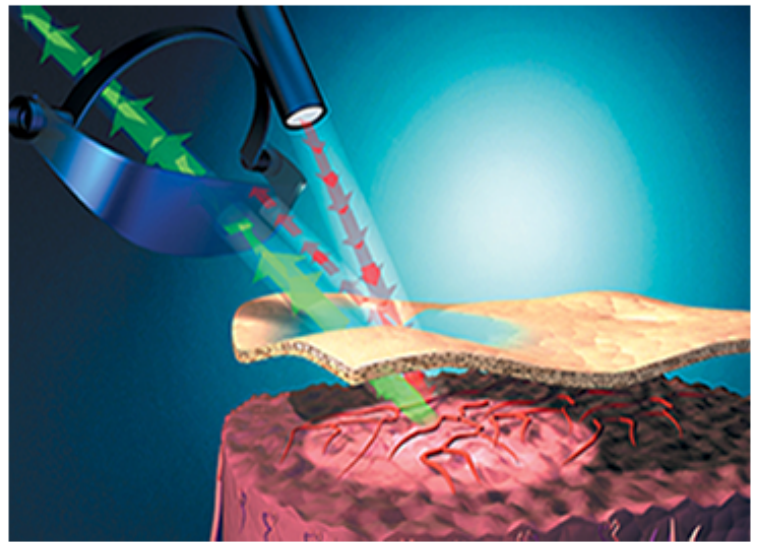


Rox Anderson, MD

Dr. Anderson is a founder of Syris Scientific, and an active advisor on new product development. He is a leading dermatologist and researcher, who has contributed fundamentally to optical diagnostics and laser surgery. Many of the laser treatments now used for skin are based on his research. An associate professor at Harvard medical school, he directs a laboratory and the Laser Center at Massachusetts General Hospital. Syris has no formal relationship with either Harvard or MGH. Dr. Anderson has published over 150 original articles and books, and is an inventor of over 40 patents.



Normal View



View with Syris v600