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野々村美宗*

Tactile Sensing in the Development of Cosmetics and Cosmetic Ingredients

Yoshimune NONOMURA*

Abstract

Although various tactile sensing systems have been developed, it is difficult to evaluate the tactile feel of cosmetics and cosmetic materials. We believe that the nonlinearity of the friction phenomena occurring on the surface of the skin is one of the causes of delicate touch texture. We have developed biomimetic materials that mimic the mechanical, surface properties and shapes of human fingers and skin. Next, we tried to elucidate the physical origin of tactile texture using the human finger model and artificial skin. Recently, a friction evaluation system that imitates the movement when a human touches things has been developed. In this system, nonlinear sinusoidal motion is achieved by the rotation of the motor with an eccentric cam. In addition, an *in-situ* observation type tactile sensing system is also used to simultaneously evaluate motion and mechanical stimulation when applying cream or touching powder. In this review, we introduce some recent studies on tactile sensing systems.

Key words: cosmetics, tactile feel, friction, skin, hair.