

〈教育セミナー〉

毛髪科学最前線—ヘアケアから再生医療まで—

美しい髪をめざして  
—化粧品ができること—

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**Efforts to Realize Beautiful Hair**

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**Abstract**

Important factors for beautiful hair are summarized in this report, based on hair structure and physical properties. Those factors are the luster, shape and motion of the hair. The first factor, hair luster, is controlled by the optical properties of surface cuticle layers and internal structure. Disordered cuticle layers and the porous structure of internal layer cause light scattering and inhibit clear light reflections. A technology to control well-ordered cuticle layers and pore-less structure is proposed to improve the optical properties. The second factor, hair shape, can be controlled by the distribution of two types of cortical cells of different structures. Curved hairs show the asymmetrical distribution of those cells. A technology to relax the curved hair shape is proposed, based on the different swelling behaviors of those cells by the adsorption of cosmetic ingredients. The third factor, hair motion, can be controlled by the distribution of two types of cortical cells of different mechanical properties. The flexible and elastic motion of hair is realized by two-layered mechanical properties, which are the softer outer layer and stiffer inner layer of the hair fiber. A technology to selectively soften the outer layer is proposed for the flexible and elastic behavior of the hair.

**Key words:** hair, structure, luster, shape, motion.