Optical Coherence Tomography To View Assess And Count Hair Follicles

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BRIEF DESCRIPTION

The invention is a portable imaging system for assessing the condition of hair loss. Optical coherence technology is adopted to provide an accurate, wide view and fast imaging solution. The system provides precise insight on the health of the hair follicle and its potential to regrow new hair, which is crucial for assessing the efficacy of hair regrowth treatments.

SUGGESTED USES

» Characterization of hair follicles; Count, density, follicle diameter, location and depth in the dermis
» Assessing the efficacy of hair regrowth treatment
» Screening tool for enhancing personalized hair loss treatment approaches

FEATURES/BENEFITS

» Combined dual modality visible light optical coherence tomography 3D oral imaging device that provides rapid real-time video imaging speeds
» Visualize, characterize, localize and count hair follicles located on and beneath the surface of the skin.
» Safe, with no radiation emissions
» Less expensive than a trichoscopy or multiphoton microscopy
» Captures data at a high resolution, at high speed and with a large field of view
» Provides insight regarding the relative health of the hair follicle itself and its potential to regrow new hair
» Can be used to longitudinally follow the clinical progress of a patient during treatment to determine its effectiveness

TECHNOLOGY DESCRIPTION

Dermoscopy of the scalp is a procedure for the diagnosis of hair loss disorders. Non-invasive imaging techniques, like trichoscopy, are used to get a superficial understanding of the hair shaft by providing magnified images of the scalp. Other solutions include the usage of ultrasound technology but provide a resolution too low to accurately characterize hair follicles. When these non-invasive techniques fail to provide sufficient information, physicians might need to use invasive methods. Moreover, there is still no appropriate method to track the longitudinal changes in alopecia after applying hair regrowth treatments, thus no accurate way of assessing their efficacy.

Inventors at UCI provide a novel, precise and portable system that enhances the whole personalized hair loss treatment experience. The invention uses optical coherence tomography to visualize, localize and count hair follicles, both on and under the skin surface. The device provides insight concerning the health of the hair follicles at different stages, including post-treatment stages, to assess the effectiveness of treatment options.

STATE OF DEVELOPMENT

Second generation working prototype is in development. The initial prototype has been used in clinical trials assessing the efficacy of using platelet rich plasma in hair regrowth treatment.

PATENT STATUS

Patent Pending