

# **Nanotechnology for the preparation of cosmetics using plant-based extracts**

## **Use of herbal extract-based nanoemulsions for hair care application**

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### **Abstract**

This chapter presents an overview of the fundamental aspects of human hair, scalp, and hair-related problems and nanoemulsions and their applicability as a delivery system of plant-based bioactives for hair care. The chapter first gives details of hair structure and properties, which is then followed by the common problems associated with human scalp and hair. The chapter further elaborates on various forms of hair formulations and their functionalities. The chapter also reveals various plant bioactives widely used for hair treatment and management. It also contains a brief description of the structure, synthesis, and characterization methods of nanoemulsions that are emerging, versatile encapsulation, and delivery systems for various active ingredients in topical applications. The properties and advantages of nanoemulsions as delivery systems are further addressed. Finally, it highlights scientific articles on nanoemulsions containing plant bioactives intended for improving the efficacy of hair-care formulations and their prospective implementations in hair-care technologies.