## IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 3, December 2024

## Film-Forming Systems: An Attractive Transdermal Delivery Approach

Khushi Rajendra Patil<sup>1</sup>, Dr. Shivshankar D Mhaske<sup>2</sup>, Prof. Sanjana Bali<sup>3</sup>, Adil Shah Bad Shah<sup>4</sup>, Khushi Moon<sup>5</sup>

Principal, Satyajeet Collage of Pharmacy, Mehkar, India<sup>2</sup> Professor, Satyajeet Collage of Pharmacy, Mehkar, India<sup>3</sup> Students, B Pharm Final Year, Satyajeet Collage of Pharmacy, Mehkar, India<sup>1,4,5</sup> Patlkhushi871@gmail.com

**Abstract:** Film-forming systems (FFS) represent a novel and promising approach to transdermal drug delivery, offering numerous advantages over conventional methods. These systems involve the application of a liquid or semi-solid formulation on the skin, which dries to form a thin, transparent, and flexible film that provides controlled drug release. FFS overcome limitations associated with oral and invasive drug delivery methods, such as first-pass metabolism, gastrointestinal side effects, and patient non-compliance. Key components of FFS, including film-forming polymers, plasticizers, and active pharmaceutical ingredients, are meticulously selected to optimize performance. This review delves into the mechanisms of drug release, formulations trategies, and evaluation parameters, highlighting their versatility in therapeutic and cosmetic applications. Recent advancements, such as nanotechnology integration and bioadhesive properties, have further enhanced the efficacy of FFS. Despite certain challenges, such as limited drug loading capacity and stability issues, FFS are poised to revolutionize drug delivery systems, offering a patient-friendly, efficient, and non-invasive solution.

**Keywords:** Film-forming systems, transdermal drug delivery, controlled release, polymers, skin penetration, bioadhesive films, nanotechnology, topical formulations, patient compliance

DOI: 10.48175/568

