

Monday Mid-day Meet & Eat Seminar – Remote

Center for Dermal Research Welcomes

Mittal Bhadiyadra, Product Development Scientist at Tris Pharma

“Microstructure Characterization for Optimizing Topical Drug Delivery”

Abstract:

The optimization of topical drug delivery systems is increasingly being driven by a deeper understanding of product microstructure. The growing emphasis from regulatory agencies on demonstrating equivalence for semi-solid dosage forms has brought microstructural characterization to the forefront of pharmaceutical development. Microstructure analysis enables rational optimization of formulation composition and processing conditions by elucidating the internal organization of phases, dispersion of active ingredients, and rheological behavior. This, in turn, enhances drug delivery efficiency, ensures batch-to-batch consistency, and improves patient outcomes. This presentation explores the evolving landscape of microstructure characterization, highlighting its rising significance in the development and regulatory evaluation of topical products. Drawing from recent literature, this presentation summarizes studies in which microstructure, though not the primary endpoint, provided key insights that supported formulation decisions and conclusive outcomes. These case studies illustrate how microstructural insights can guide rational formulation strategies and enhance the quality and performance of topical therapeutics.

Biography:

Mittal Bhadiyadra is a dedicated scientist with over eight years of experience in the pharmaceutical industry, specializing in the development of solid and liquid oral dosage forms. She began her career at I3 Pharmaceuticals in Pennsylvania, where she served as a Formulation Scientist, contributing to the development of generic drug products. Currently, Mittal is a Product Development Scientist at Tris Pharma in New Jersey, where she continues to advance formulation and process development initiatives.

Mittal possesses a Bachelor's degree in Pharmacy from CHARUSAT University in Gujarat, India, and a Master's degree in Pharmaceutical Sciences from Long Island University, New York. She is presently pursuing a Ph.D. in Pharmaceutical Sciences at Rutgers University, New Jersey, under the mentorship of Professor Bozena Michniak-Kohn. Her doctoral research concentrates on topical and transdermal drug delivery systems, demonstrating her aspiration to broaden her expertise beyond conventional dosage forms and to contribute significantly to the expanding domain of advanced dermal therapeutics.

July 28, 2025

12:00pm EST



**Mittal
Bhadiyadra
Tris Pharma**

CONFERENCE LINK Available on our website:

<https://sites.rutgers.edu/centerfordermalresearch/cdr-events/seminar-series/>