

# Formulation and Manufacture of Pharmaceuticals by Impregnation onto Porous Carriers

Published date: Nov. 13, 2020

## Technology description

Figure 1. SEM Pictures of pure Neusilin<sup>®</sup> and impregnated with Fenofibrate at 30% loading.

Invention Summary: Rutgers scientists have developed a novel platform of pharmaceutical product development by utilizing fluid bed impregnation (FBI) of API solutions onto porous carriers.

Impregnation of solutions into porous carriers allows extremely uniform distribution of small amounts of material, which can be used for drug dosage regulation. Currently, the method can be adjusted for drug content as low as 0.1% and as high as 10%, thus spanning the entire range of interest for poorly soluble, highly potent compounds in oral delivery applications. The drug release profile can also be controlled through the manufacturing process. Since the impregnated material can be filled directly into capsules, many inactive substances that were previously required for formula stability throughout encapsulation (i.e. compression aids, glidants, surfactants, disintegrants, or lubricants) can be eliminated as well. Also, the FBI method is uniquely suited for drug formulation development and clinical supply manufacturing, as it is safer than processes that require drugs to be handled in dry, powder form.

## Application area

Therapeutics

Clinical Supply Manufacturing

Product Formulation and Development

Drug Loading

Drug Delivery

Controlled Release

Porous Carrier Technology

## Advantages

Approach eliminates all API operations after synthesis and purification (i.e., crystallization, drying, milling) making issues related to API crystallinity, physical stability, flow, cohesion, electrostatics, and particle size distribution no longer relevant

Extremely uniform material content in finished dosages

Enhances deliverability of poorly soluble drugs  
Significant simplification of product manufacturing sequence  
Safety and environmental improvements  
Simplified scale-up procedure  
Reduced number of critical raw material attributes and control parameters

## Institution

[Rutgers University](#)

## Inventors

[Plamen Grigorov](#)

[Fernando Muzzio](#)

Assistant Professor

[Benjamin Glasser](#)

## 联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com