

## Pharma: lessons from Covid-19



Pharma supply chains have been severely stressed by the coronavirus pandemic, with countries scrambling to secure enough medicines and APIs.

In response, an important new [Policy Paper from Medicines for Europe](#) suggests the pharma industry should invest in a globally competitive medicine manufacturing sector – and that EU policies should encourage firms to build and maintain diverse, secure and sustainable supply chains.

Advanced manufacturing is a perfect fit for the accelerated trend of reshoring production closer to local markets, as well as the shift to providing personalized medicines – meaning smaller plants producing customized products. And as the chart from [a new Report by CMAC/pwc](#) confirms,

**“Continuous manufacturing has a significant role in the future of pharma manufacturing. It offers unique opportunities to reduce the risk and cost associated with scale-up/transfer from development to commercial sites. Along with the ability to flex the supply chain, according to demand, it offers competitive advantages not provided by traditional batch manufacturing.”**

Contact us to help you rebuild in a **safer, greener, faster and cheaper way**. Our continuous technology offers significant benefits, including more consistent product quality, smaller footprint, higher yield and reduced CAPEX/OPEX costs.

## CBD Crystallization

Cannabidiol (CBD) is gaining popularity as a natural medicine. There are several steps required to take the cannabis biomass ‘from crop to crystal’. NiTech’s crystallizers can be used in the crystallization of the CBD molecules



from the CBD distillate to produce crystalline CBD isolate, helping to overcome the limitations of established, batch-based equipment.

## Arkema flow success with NiTech

Arkema, the leading French specialty materials company, has [for the first time](#), achieved the continuous flow synthesis of zeolite NaX using a NiTech<sup>®</sup> continuous oscillatory baffled reactor (COBR).

**As the authors noted, “A continuous system for zeolite synthesis integrating a COBR is attractive from a productivity point of view.... The validation of the system in a pilot-scale (so far up to 50 litres/hour) provides the potential for reliable scaling up to industrial-sized production”.**

The success highlights some key benefits of NiTech’s technology:

- ❖ **“The use of a COBR not only allowed the same residence time as the batch system, but also a controlled temperature profile, thanks to the plug flow behavior and effective heat transfer;**
- ❖ **“The consistent mixing environment provided by the COBR was suitable for the handling of zeolite crystals avoiding sedimentation and preventing blockage;**
- ❖ **“The plug flow behavior, characteristic of COBRs, allowed matching the residence time necessary to complete crystallization of the batch system;**
- ❖ **“After 5 hours of operation, reactor walls were incrustation-free;**
- ❖ **“The enhanced heat transfer provided by the COBR resulted in a controlled temperature profile along the reactor during the operation.”**