



Particle Science & Engineering (PS&E)

Delivering expertise in Polymorph, Salt, Co-crystal screening & Crystallization



The PS&E group at Sai Life Sciences offers screening of most preferred/stable solid form (polymorph) and version (salt and co-crystal) for development. This group also develop robust & scalable crystallization processes with in-line PAT monitoring and offers process controls on physical properties like specific solid form, specific/micronized size distribution and flow behaviour.

Highlights

- Located across Manchester, UK and Hyderabad, India
- Our in-house capabilities and expertise allows rapid selection of most appropriate solid form and version of compounds from preclinical to clinical & commercial stages of development.
- Sai uses in-depth scientific crystallization concepts & operate within Meta Stable Zone Width (MSZW) boundaries in designing controlled crystallization processes.
- We apply in situ & online real time monitoring of crystallization processes using PAT tools like FBRM, PVM and Blaze.
- Particle size reduction technologies (both bottom-up crystallization & top down micronisation).
- Highly experienced team of scientists with cumulative experience of 50+ years.
- Infrastructure supporting the entire spectrum to cater from discovery to early phase to CMC to integration of client feedback.

Key offerings

- Version screening (salt & co-crystals) and recommendation of suitable salt / co-crystal for development.
- Phase-appropriate solid form / polymorph screening and recommendation of preferred / thermodynamically stable solid form for development.
- Solubility curves and MSZW determination using Crystal16™
- Development of controlled, robust & scalable crystallization processes using in-line PAT tools and QbD based study designs.
- Crystallization process development to meet critical quality attributes for the final product such as desired solid form/polymorph, particle size distribution or bulk properties.

- Process optimization for manufacturing and scale-up, including structured problem-solving approach to mitigate scale up risks.

Best-in-class infrastructure

- Parallel reactors/crystallisers
 - Mettler Toledo EasyMax 402™ controlled lab reactors (100–400 mL)
 - Radleys™ (500 mL, 1 L)
 - Mya-4 parallel crystallizer
 - HELTM Polyblock PB4
- PAT tools
 - Mettler Toledo particle track FBRM (G400)
 - Blaze Metrics with Raman
 - Mettler Toledo ReactIR 702L
 - PVM (V19)
- Particle size reduction
 - Microniser (M-50), R&D & plant scale (M-200)
 - R&D scale POC (Bead milling)
- Solid form & version screening
 - Crystal16™
 - Miniaturised parallel crystalliser
- Physical property characterisation
 - PXRD
 - Modulated DSC & TGA
 - DVS
 - Malvern Mastersizer
 - FT-IR, NMR
 - Other orthogonal techniques

For more information contact: contact@sailife.com