



IFPRI BRIEF TEMPLATE

Check One: Project Review Collaboration
 Workshop Other

Descriptive Title	Improving particle morphology by Spherical Crystallization or in-situ agglomeration
Working Title¹	Spherical Crystallization
Technical Area²	Formation
Date	June 15 th , 2022
Short Description	Crystallization processes often yields particles with an undesired morphology that exhibit isolation/drying issues and are not in-line with the intended additional processing/applications, e.g tableting, dissolution, flow behavior. (Spherical) agglomeration during the crystallization or processing after the crystallization before solid-liquid separation is a way to alter the particle morphology and improve the application of the resulting product. Because of the large amount of literature, an overview is needed of the current state of the art to summarize the possibilities, advantages and limitations and main controlling parameters.
Objectives	<ul style="list-style-type: none"> - Overview of spherical crystallization techniques/methods enabling the formation of well controlled morphologies of particles from crystals during or directly after crystallization before solid liquid separation. - Overview of advantages and limitations of before mentioned techniques. - Summary of potential techniques and required co-solvents/binders/additives, linked to compound properties. - Description of influential factors within the process of spherical crystallization that can be used to stir the morphology of the resulting particle.
Scope	<p>In scope are:</p> <ul style="list-style-type: none"> - Spherical agglomeration during ‘wet’ processing - Addition and co-processing with co-solvents/binders/additives - Mechanisms and kinetics of agglomeration - Process parameters and solvent properties to trigger agglomeration - Alternative crystallization methods which trigger agglomeration - Suggestions about controlling the process, including sampling strategy or inline measurements

¹ Title used in meeting agendas and file archives

² One or more from the following list: W = wet systems; D = dry systems; F = particle formation; SR = size reduction; M = modeling; SE = systems engineering

Recommended Contractors (2 or 3)		
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