IFPRI BRIEF TEMPLATE

Check One: ☒Project   ☐Review   ☐Collaboration
                 ☐Workshop   ☐Other

Descriptive Title	Kinetic model to predict particle morphology from Spray Drying.
Working Title[1]	Drying Kinetics and Morphology
Technical Area[2]	Particle Formation
Date	25/6/19
Short Description	Spray Drying is a "black box" technology with limited predictability when transferring formulations from the laboratory to the pilot scale of : a) If a dry powder/particles will be formed and what conditions (temperature) are required. b) If a powder/particle is formed what morphology the particles will have and does it vary with different process conditions.
Objectives	An implementable numeric model for single droplet drying that can predict product morphology based on inlet feed properties such as rheological behavior, surface tension, composition etc using drying kinetics as a basis. Temperature ranges should include above and below the boiling point. The droplet size should be below 200um and drying time scales on the order of less than 10 seconds. The model should be validated by experiments.
Scope	Solvent used should be water – not organic solvents (out of scope). Compositions – should include dissolved solids (organic and inorganic), saturated solutions and slurry suspensions. The droplet size should be below 200um Drying time in the order of 10s Temperatures in the range of 50°C to 140°C (outlet temperature)

Recommended Contractors (2 or 3)		
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[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

Submitted By:	
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