Applications of Artificial Intelligence in Powder Technology

IFPRI wants to commission a review of recent developments in the field of artificial intelligence and their potential applications in the field of Powder Technology. The level of understanding in the IFPRI community of AI – what tools it is comprised of and what are their capabilities - is limited, hence this review would be simultaneously a tutorial and a state-of-the-art review. This review can be "a particle technologist's guide to AI methods".

The review should begin with a definition of "artificial intelligence" and "machine learning" and other relevant terminology. It should describe the most applicable AI methods for particulate systems and discuss what types of problems they are designed to solve and what their strengths and weaknesses are. Of particular interest is the training/calibration problem: what types and volume of data are required?

IFPRI members come from a broad range of industries, so the range of applications is correspondingly large, e.g., particle and powder characterization, product modeling, process modeling. Understanding how broad this scope is, we expect that the author(s) of the review will narrow its scope as needed to make it tractable.