A method was developed to create high-fidelity lunar dust simulants that better match the unique properties of lunar dust than the existing simulants. The new dust simulant is designed to more closely approximate the size, morphology, composition, and other important properties of lunar dust (including the presence of nanophase iron).

A two-step process is required to create this dust simulant. The first step is to prepare a feedstock material that contains a high percentage of agglutinate-like particles with iron globules (including nanophase iron). The raw material selected must have the proper mineralogical composition. In the second processing step, the feedstock material from the first step is jet-milled to reduce the particle size to a range consistent with lunar dust.

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