Coarsening of particles during liquid phase sintering is known to be an example of Ostwald ripening. This coarsening process, in a fully wetting system, is simulated in three dimensions with a Monte Carlo model. The results from the simulation for microstructures, particle size distributions and kinetics are compared to available experimental findings. Using these two-phase digital microstructures as inputs, microstructure-property relationships are explored using a viscoplastic simulation based on a Fast Fourier Transformation (FFT) algorithm. A systematic parametric study, varying some microstructural parameters such as relative volume fractions of the two phases, contiguity of particles and morphology of the particles, is employed to explore the response of the hypothetical microstructures under deformation.

Sukbin received his Bachelor's degree in Materials Science and Engineering from Hanyang University, Korea, in 1999 and his Master's degree in both Materials Science and Engineering and Information Systems Management in 2003 from Carnegie Mellon University. He is currently a Ph.D. candidate under the guidance of Prof. Rollett.