The **Supplementary Information Movie S1** demonstrates the execution of the CASGAP method to generate a 3D structure with log-normally distributed aspect ratio (shape) and volumetric radius (size). The orientation is distributed according to the von-Mises Fisher distribution. Additional details about the distributions can be found in the caption of Figure 7. The particles are colored by their coordination number which is calculated using a distance cutoff of 10 units. The units of distance can be related to box or particle size as described in the caption of Figure 7. The color changes homogeneously, indicating that the CASGAP method adds the particles uniformly throughout the volume of the structure.