Supplementary Information

Figure S1. Histogram for a representative sample of AuAg alloy nanoparticles with Au-to-Ag molar ratio equal to 1.

![Histogram for AuAg alloy nanoparticles](image1)

Figure S2. Histogram for a representative sample of Au(core)Ag(shell) nanoparticles with Au-to-Ag molar ratio equal to 1.

![Histogram for Au(core)Ag(shell) nanoparticles](image2)
Supplementary Information

Figure S3. Statistical dispersion for the lengths and widths of nanorod populations with varying aspect ratio. a) AR = 1.9, b) AR = 3.0, c) AR = 3.9.

a) AR = 1.9

b) AR = 3.0
c) AR = 3.9