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Title: Growth morphology and special diffraction characteristics of multifaceted gold nanoparticles

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Highlights

- Seed based synthesis of nano gold particles with decahedral and truncated tetrahedral morphologies.
- Morphological features explained based on supergroup symmetry of the seed.
- Triangular streaks around the Bragg spots correlated with shape effect.
- Forbidden reflections $\frac{1}{3}\{422\}$ from truncated tetrahedral nanoparticles understood in terms of intrinsic fault.
- Decrease in lattice parameter was corroborated in terms of aforesaid fault.

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