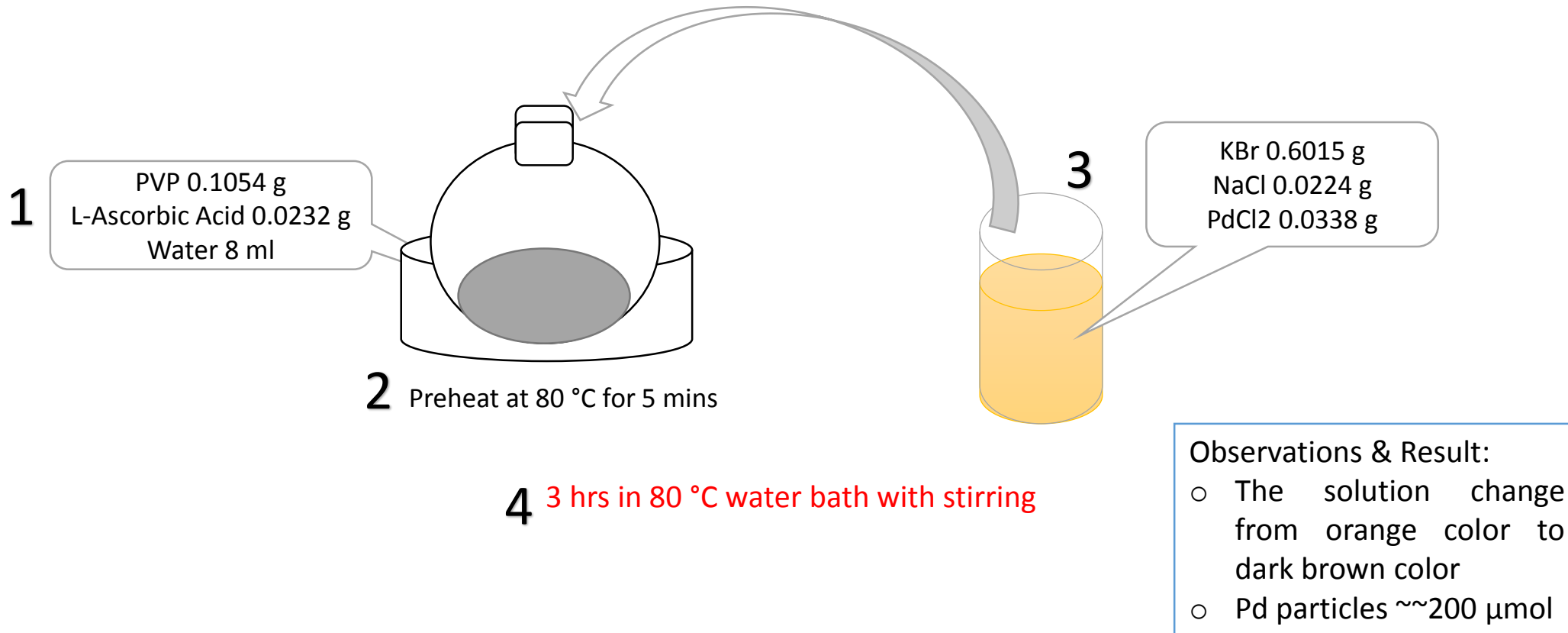
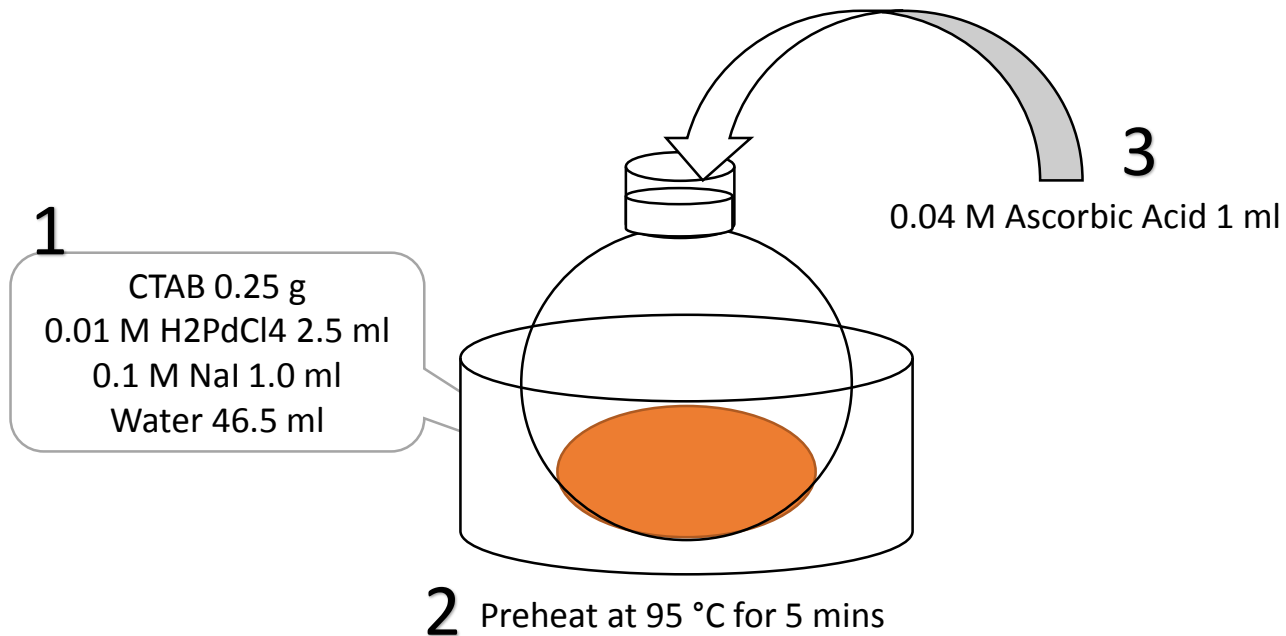


# Palladium Nanoparticle Synthesis and Analysis

# Synthesis Procedure---PVP as surfactant



# Synthesis Procedure---CTAB as surfactant ( Pd Nano Cubes)

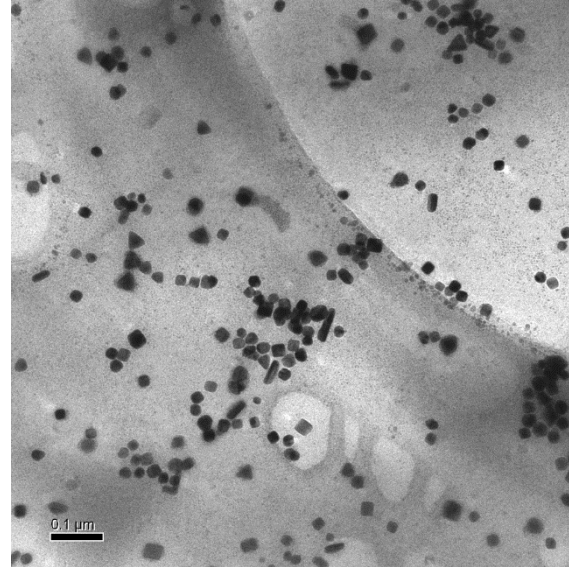
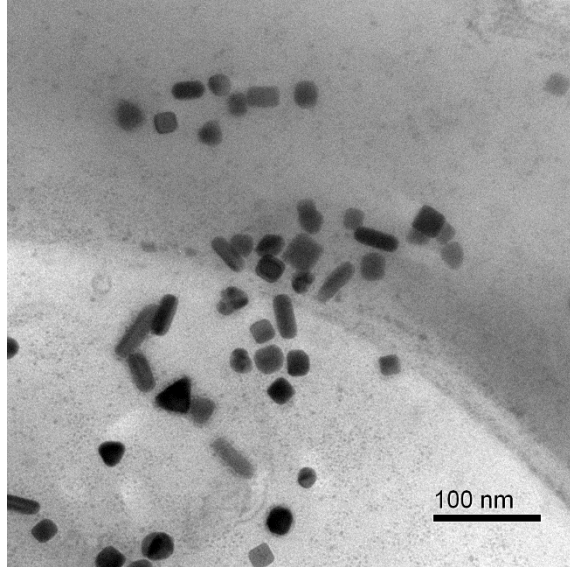
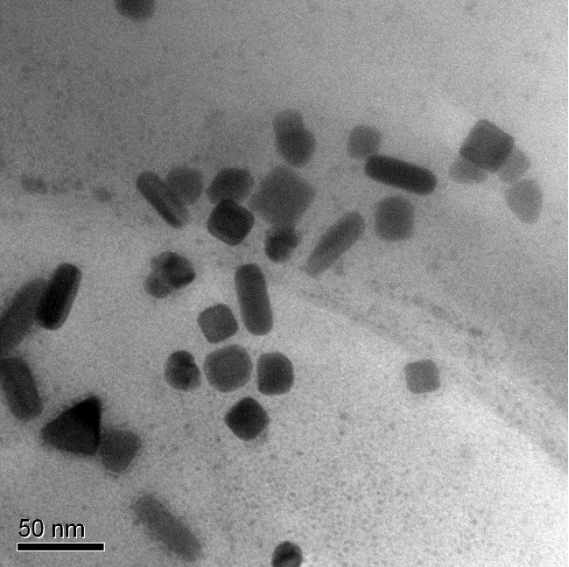
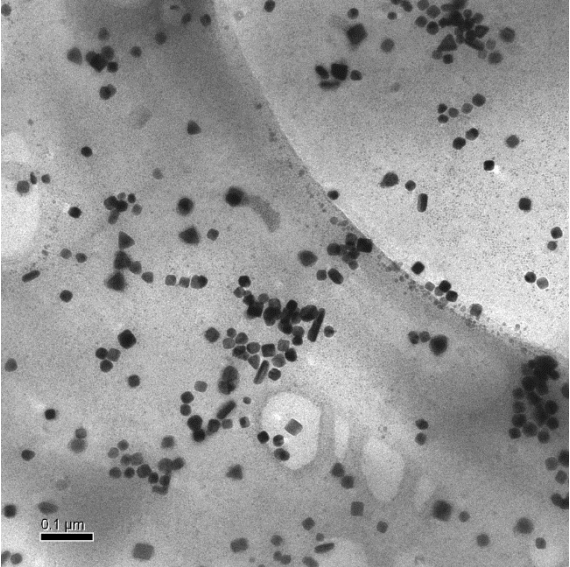


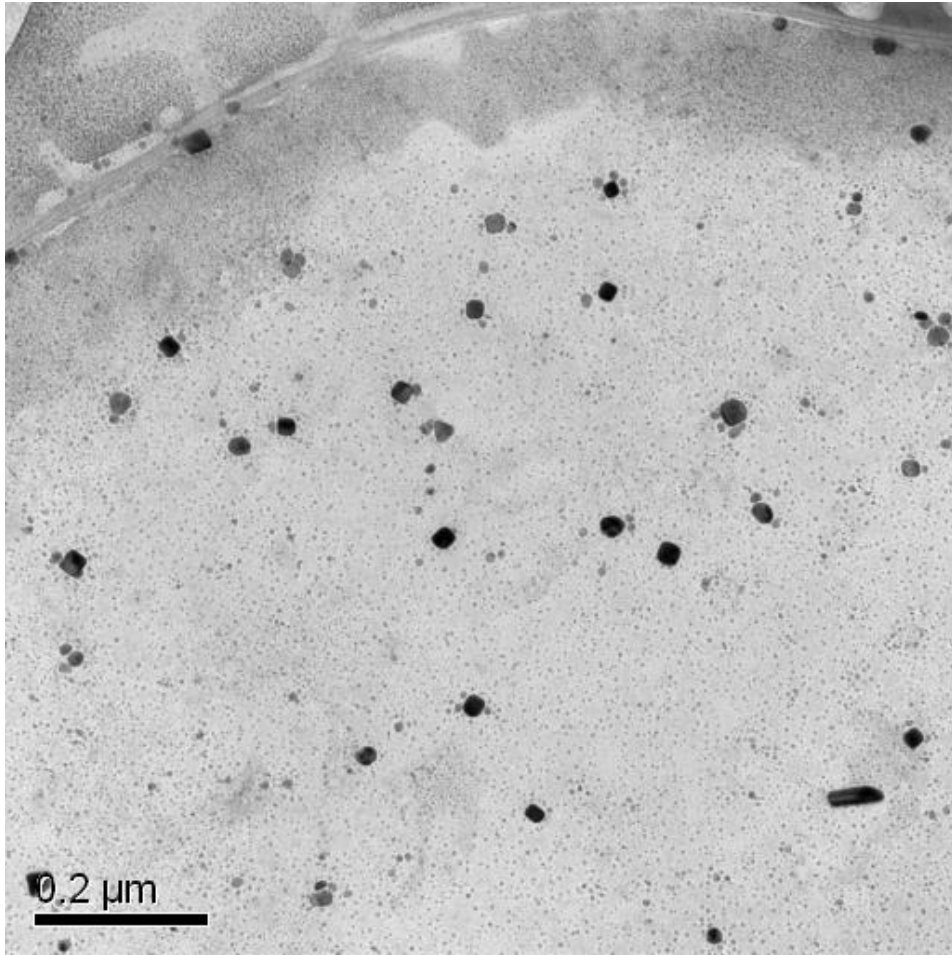
## Observations & Results :

- Pd precursor in CTAB is color orange
- After adding NaI, the solution became dark red color
- After 30 mins reaction, the final product is dark brown color
- Pd particles amount 25  $\mu\text{mol}$

**4** 30 mins in oil bath at 95 °C with stirring

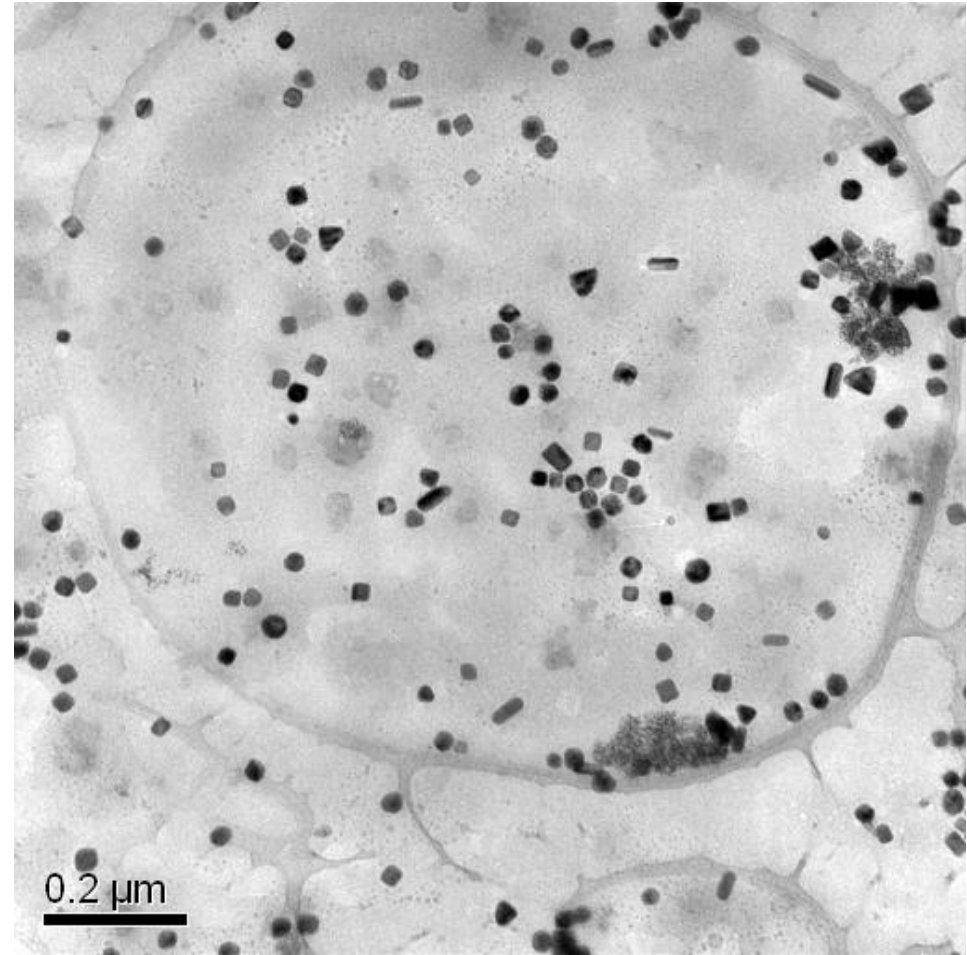
# TEM image of Pd nanocubes





5 days in Room T. Before ECD experiment

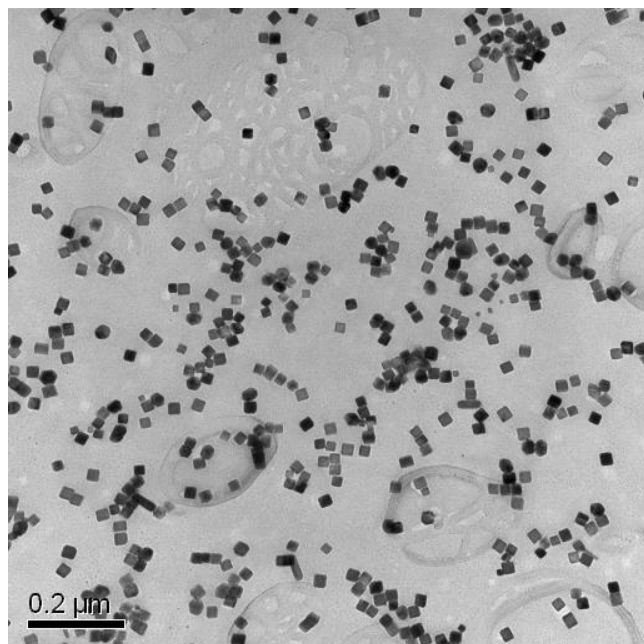
Average Length **27.7 nm**



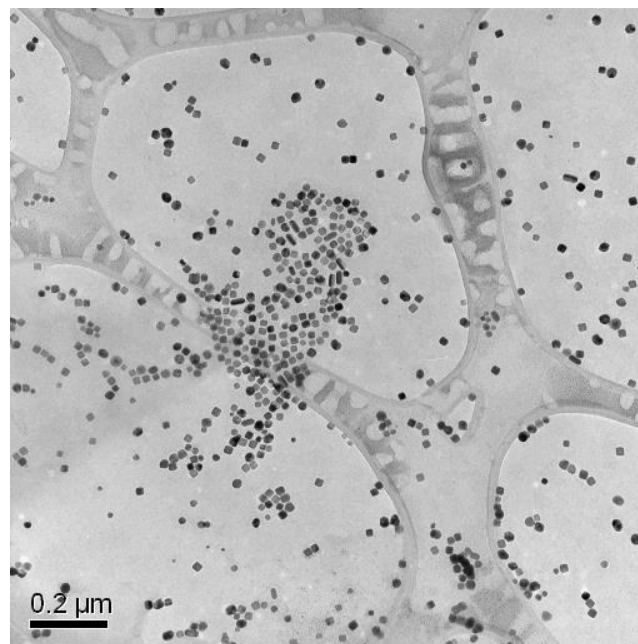
After ECD experiment

Average Length **29.2 nm**

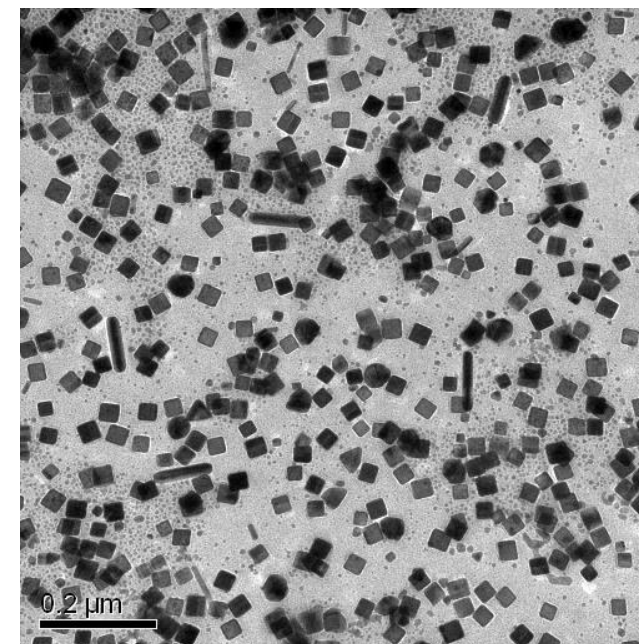
100 ul NaI



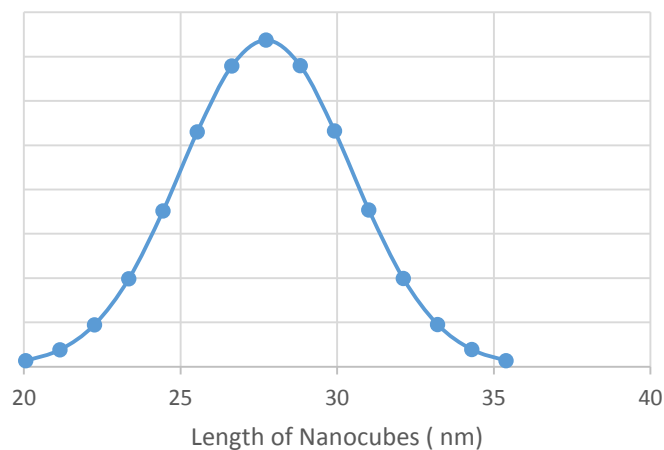
200 ul NaI



300 ul NaI

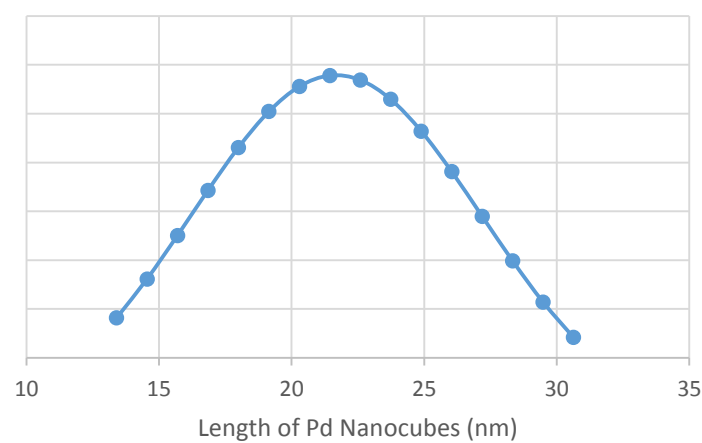


07-09-1 Pd cubes size distribution



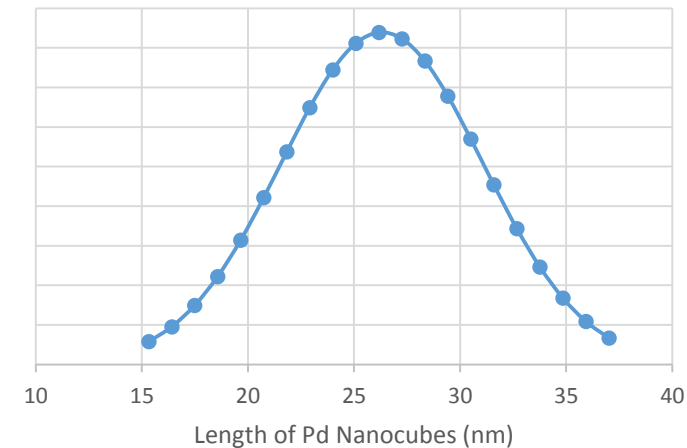
Average Length **27.7 nm**

07-09-2 Pd cubes size distribution



Average Length **21.7 nm**

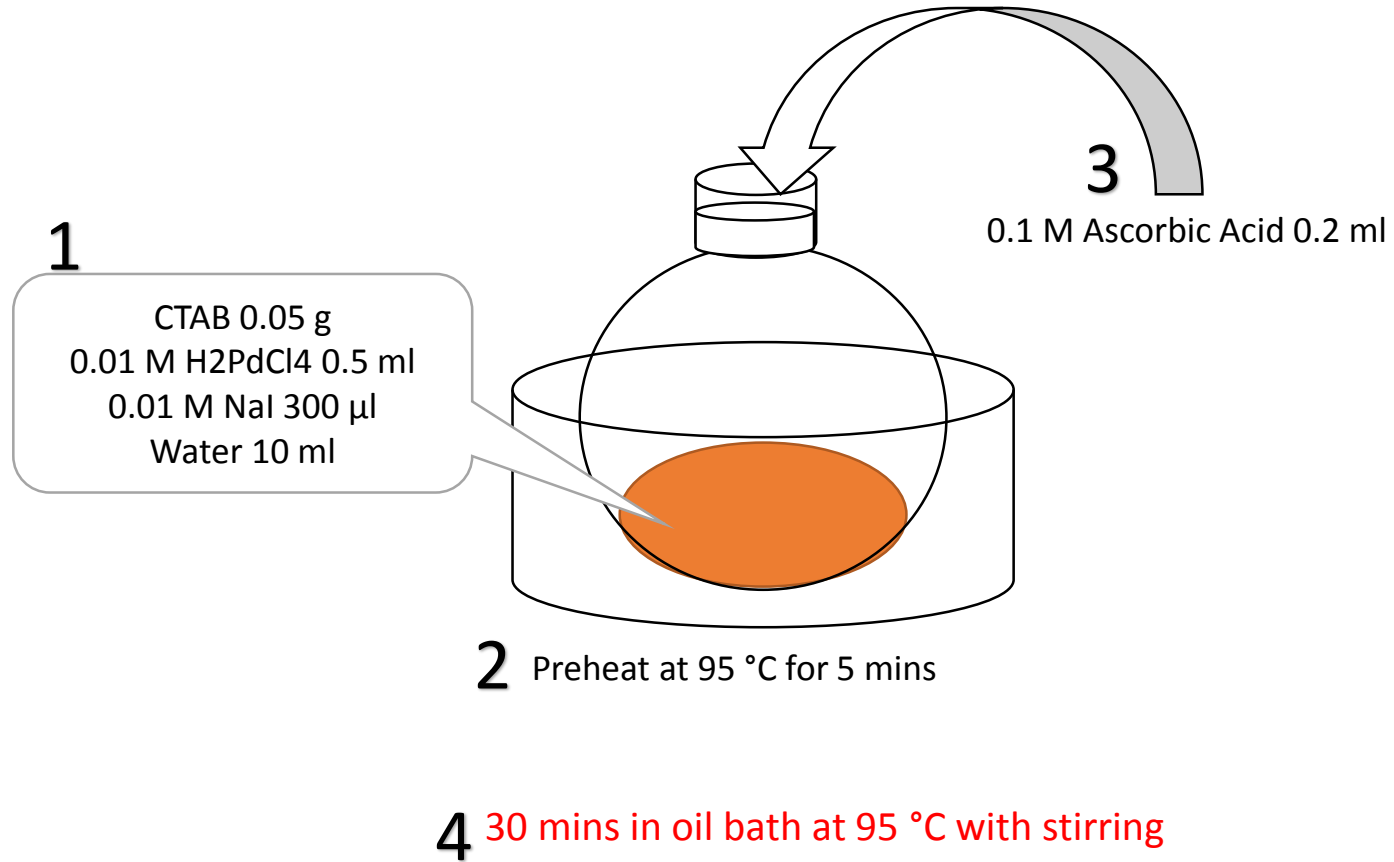
07-09-2 Pd cubes size distribution

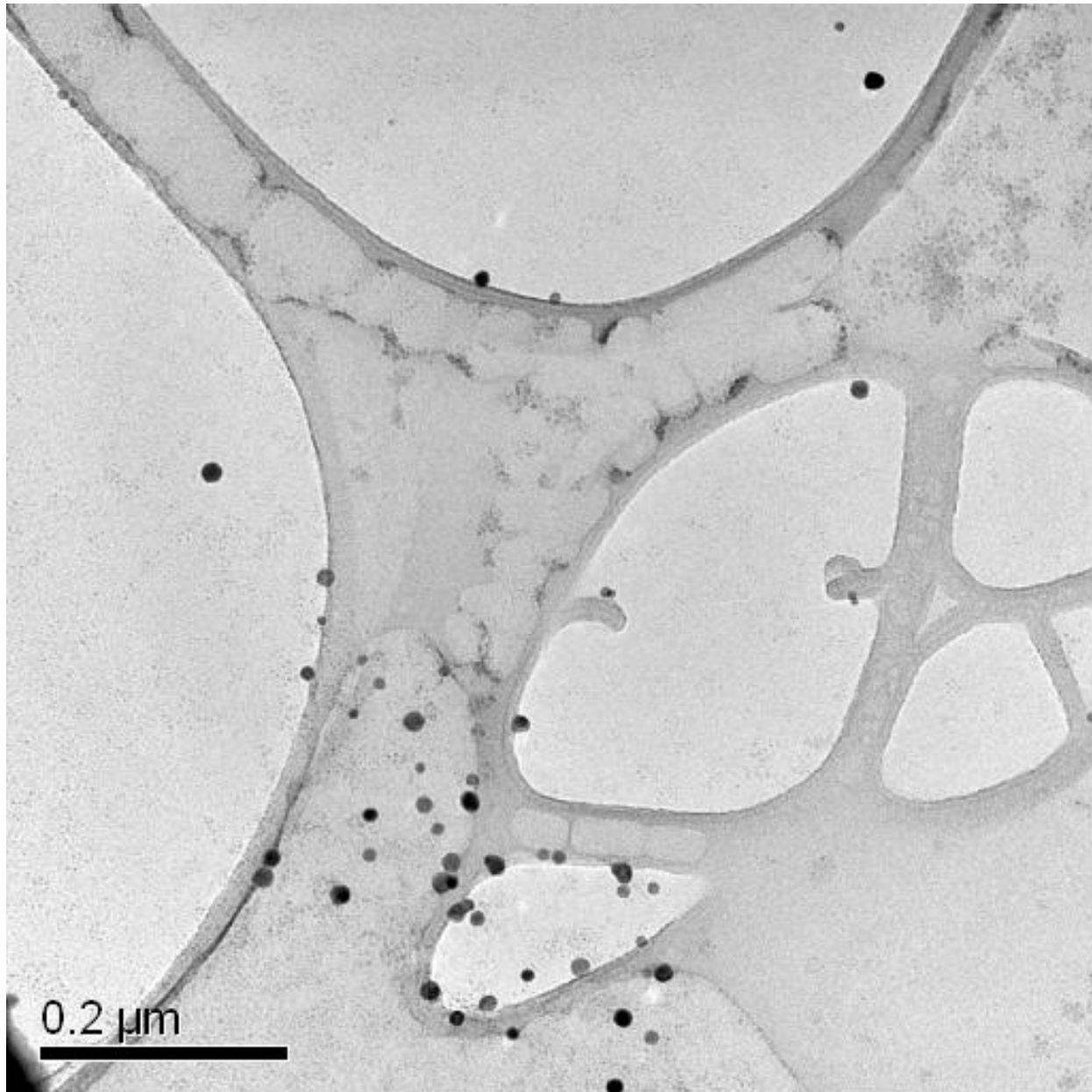


Average Length **26.3 nm**

# Synthesis Procedure---CTAB as surfactant (Pd nano octahedron)

## Step I ---Seed Synthesis



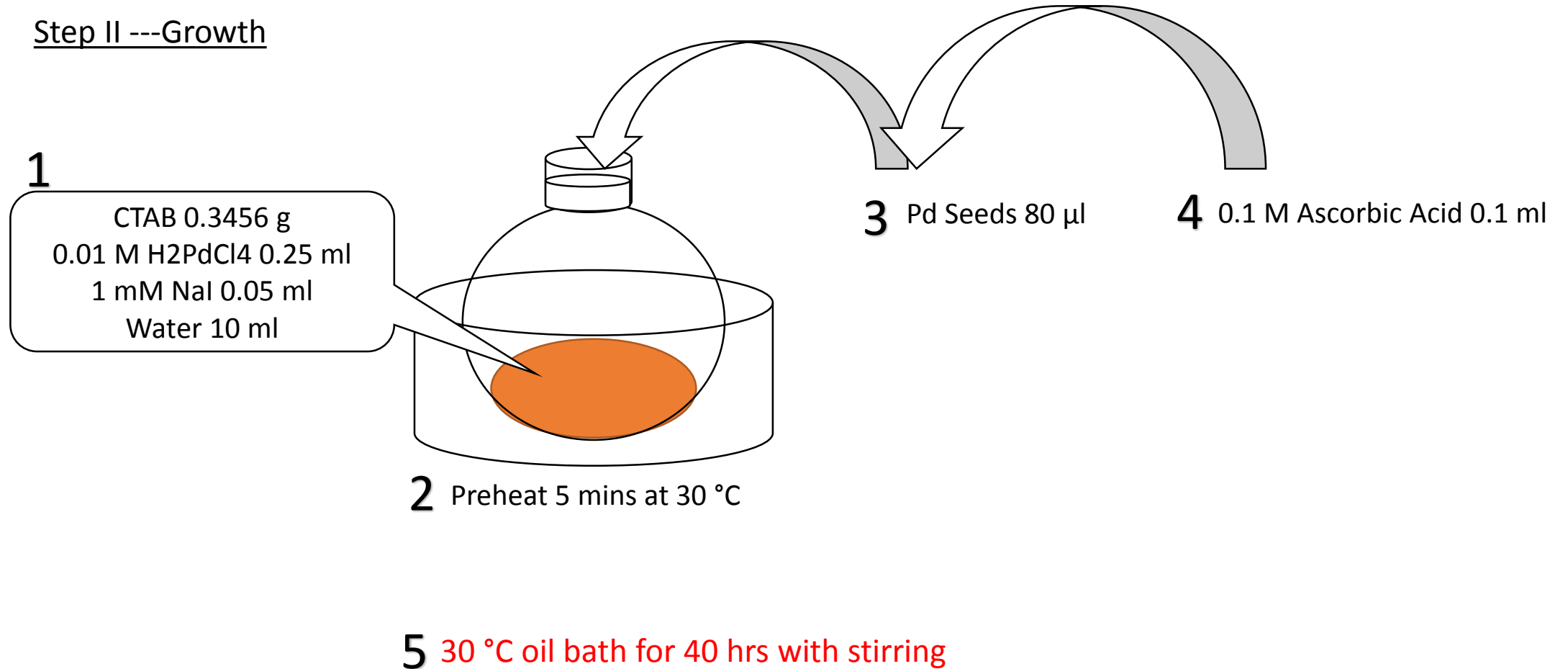


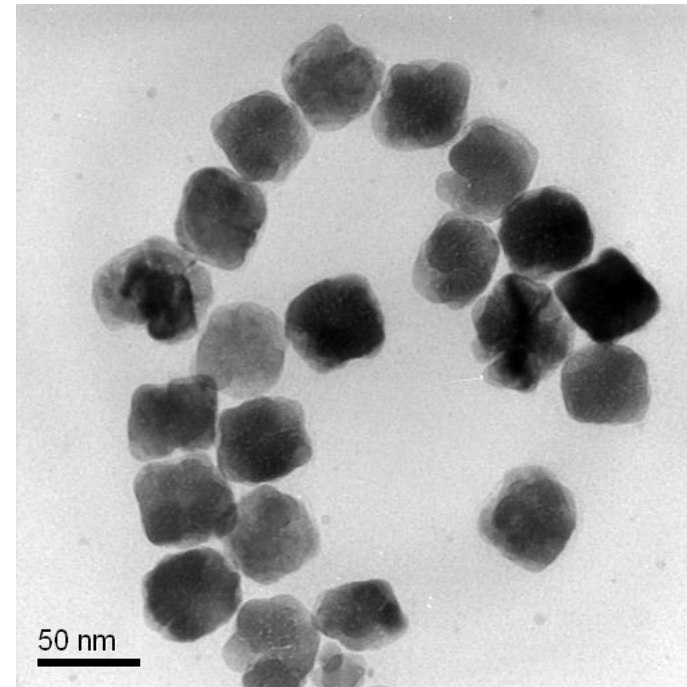
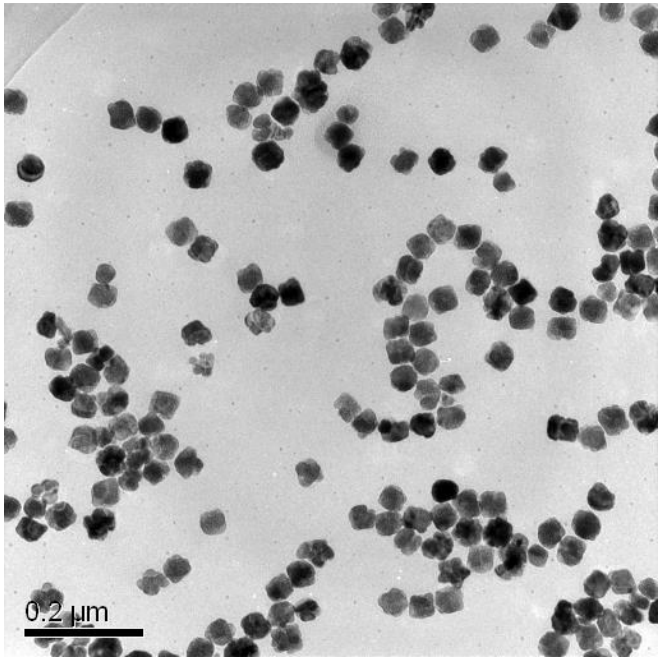
5-10 nm



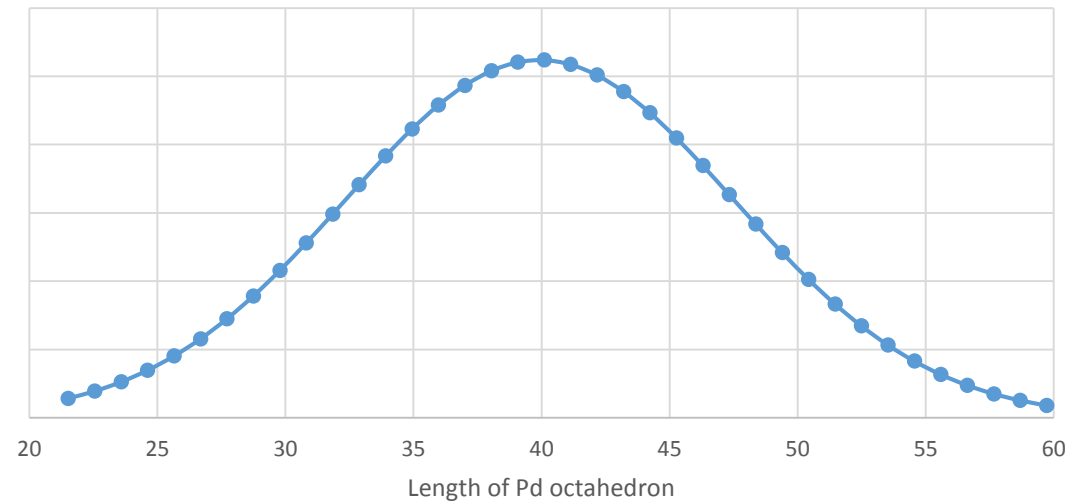
# Synthesis Procedure---CTAB as surfactant (Pd nano octahedron)

## Step II ---Growth





07-09-4 Pd octahedron size distribution



Average Length **39.9 nm**