

ESI

Efficient catalytic activation of Suzuki Miyaura C–C coupling reactions with recyclable palladium nanoparticles tailored with sterically demanding di-*n*-alkyl sulfide

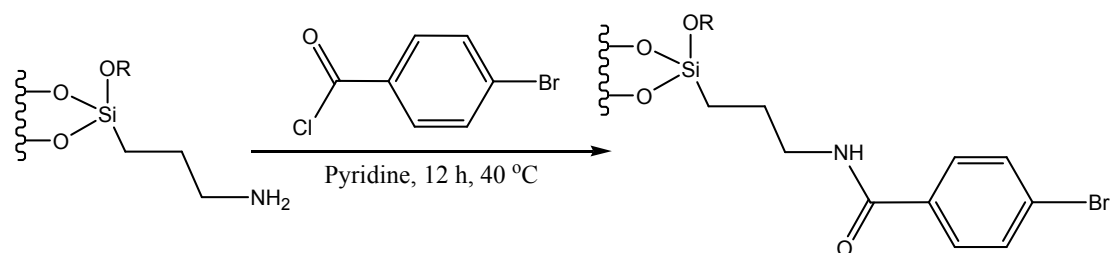
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Contents

S1.	Immobilisation of 4-Bromobenzoic Acid on Silica	1
Figures S5–S33.	Scan Files	3–19
Figures S26–S28.	Size distribution graph of NPs 2–7	19–20

S1. Immobilisation of 4-Bromobenzoic Acid on Silica¹

4-Bromobenzoic acid (1.99 g, 10 mmol) was refluxed with freshly distilled SOCl₂ (20 mL) for 3 h. Thereafter the solution was cooled and thionyl chloride was evaporated off to give 4-bromobenzoyl chloride as a white solid. 3-Aminopropyl trimethoxysilane-modified silica



Scheme S1. Immobilisation of 4-Bromobenzoic Acid on Silica

(1.00 g, Aldrich), pyridine (0.404 mL), dry THF (10 mL) and 4-bromobenzoyl chloride (1.150 g, 5.25 mmol) were stirred at 40 °C for 12 h in a round bottom flask under a N₂ atmosphere. The suspension was filtered through G-4 crucible and washed with 5% (v/v) HCl (3 × 20 mL) followed by 0.02 M aqueous K₂CO₃ (2 × 20 mL) and rinsed with distilled water (40 mL) and ethanol (40 mL). The resulting solid was washed with excess dichloromethane and dried at room temperature in air, resulting in white powder.

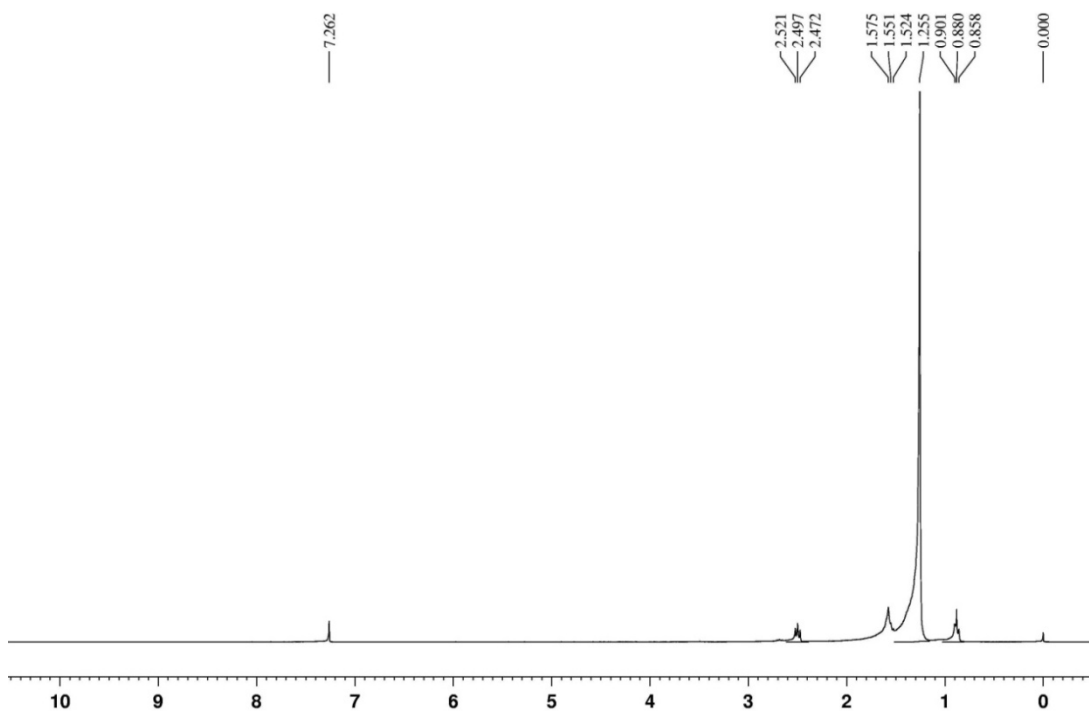


Figure S1. ^1H NMR Spectrum of Ligand (L1)

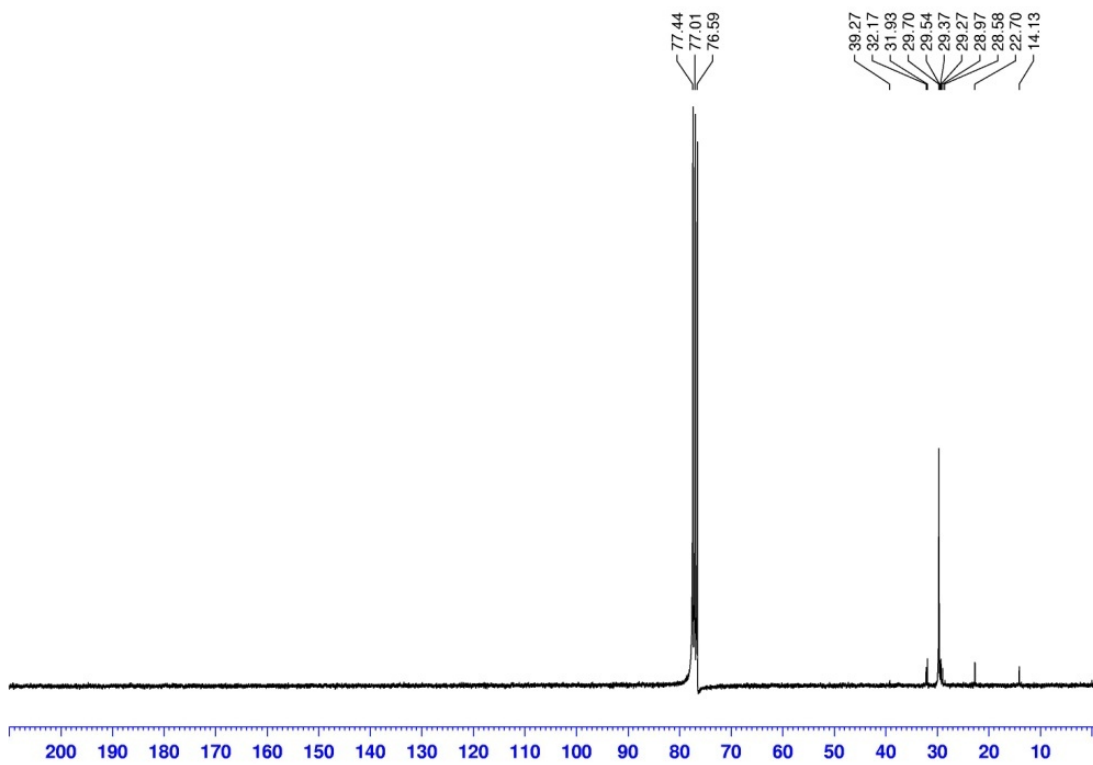


Figure S2. $^{13}\text{C}\{^1\text{H}\}$ NMR Spectrum of Ligand (L1)

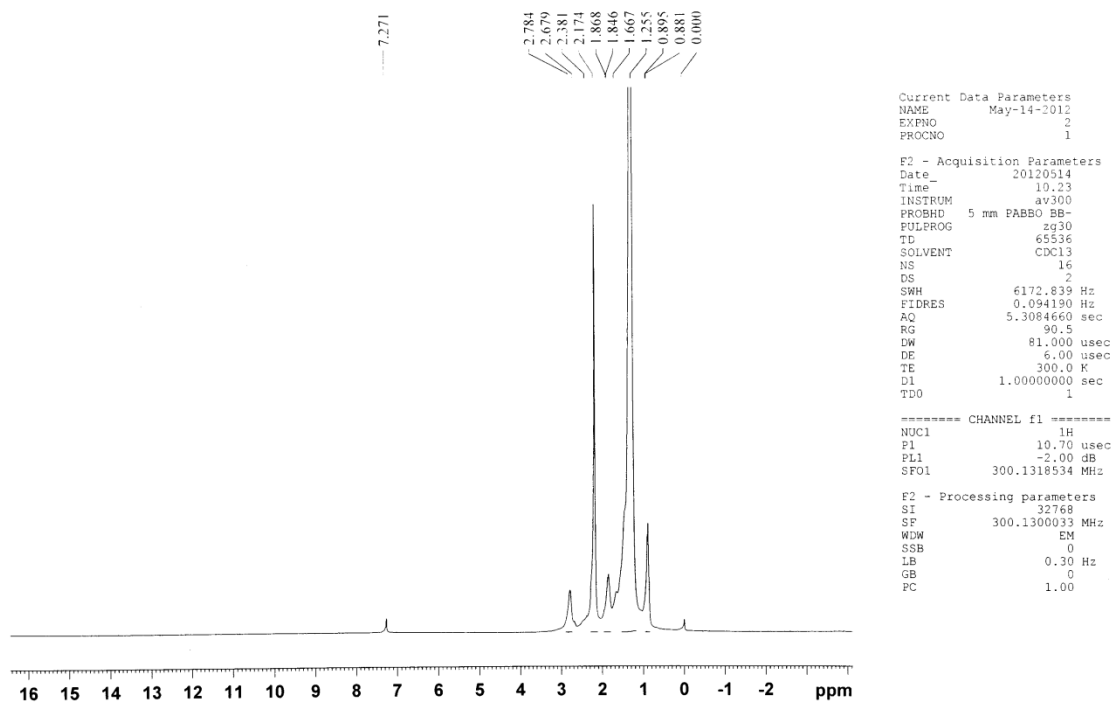


Figure S3. ^1H NMR Spectrum of **1**

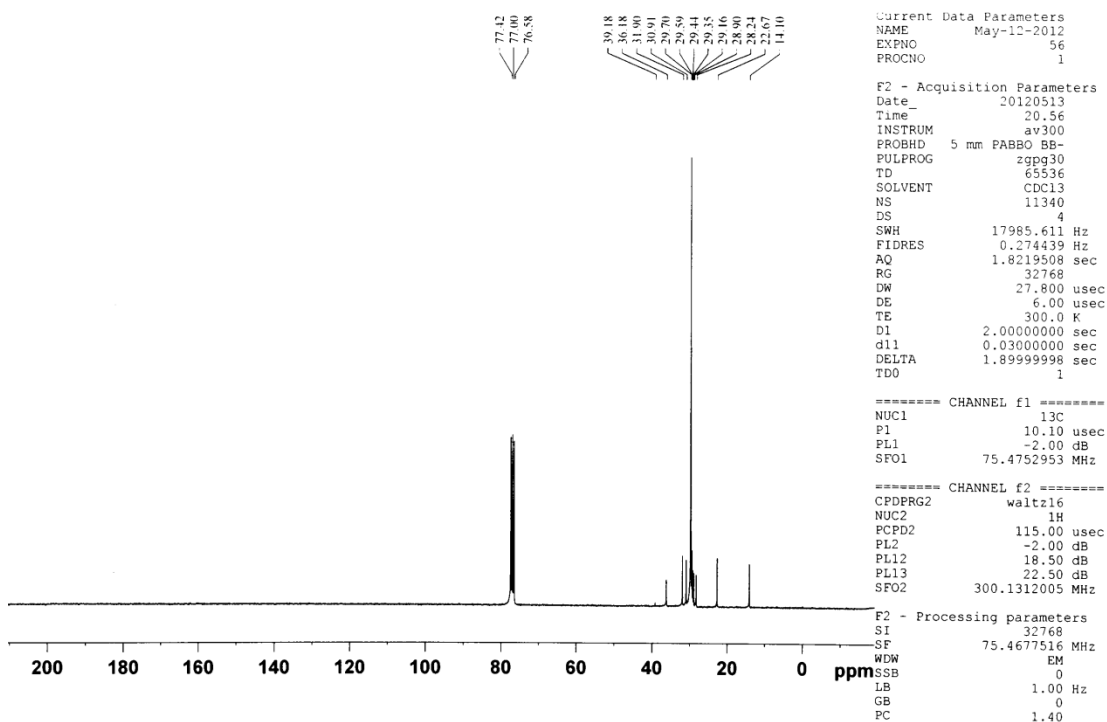


Figure S4. $^{13}\text{C}\{^1\text{H}\}$ NMR Spectrum of **1**

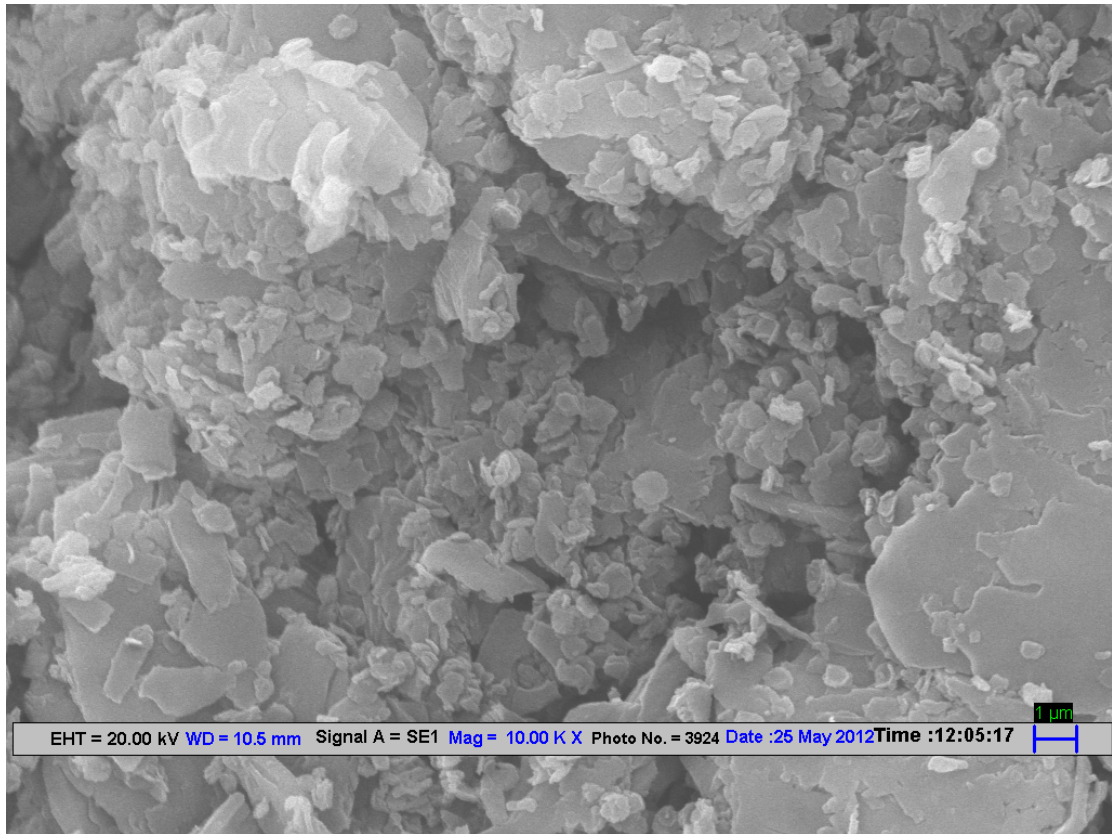


Figure S5. SEM Image Pd NPs 2

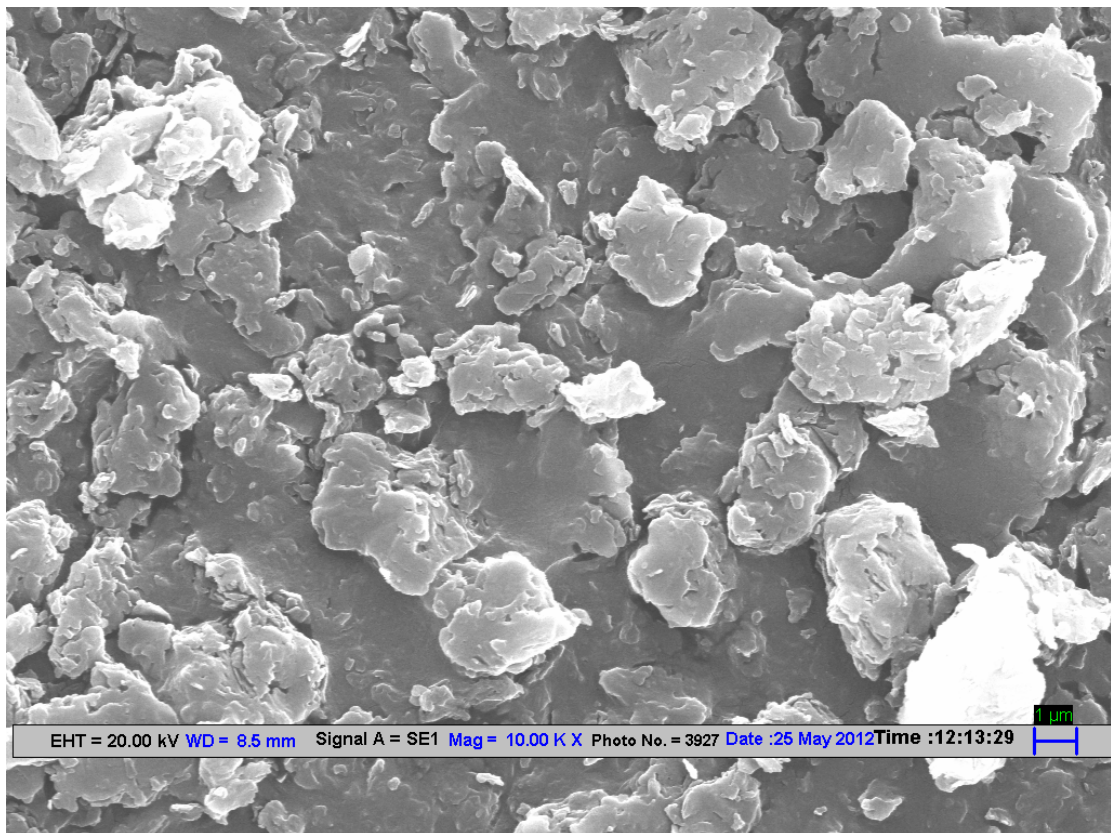


Figure S6. SEM image Pd NPs 3

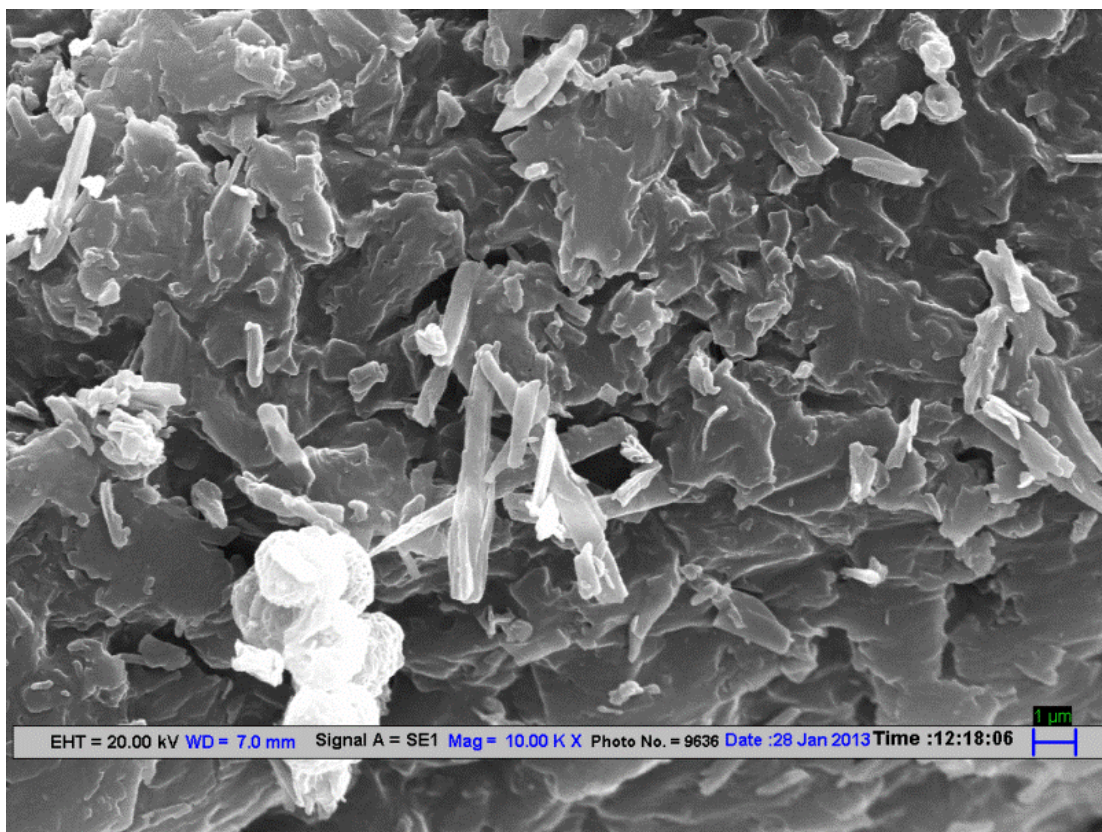


Figure S7. SEM image Pd NPs 4

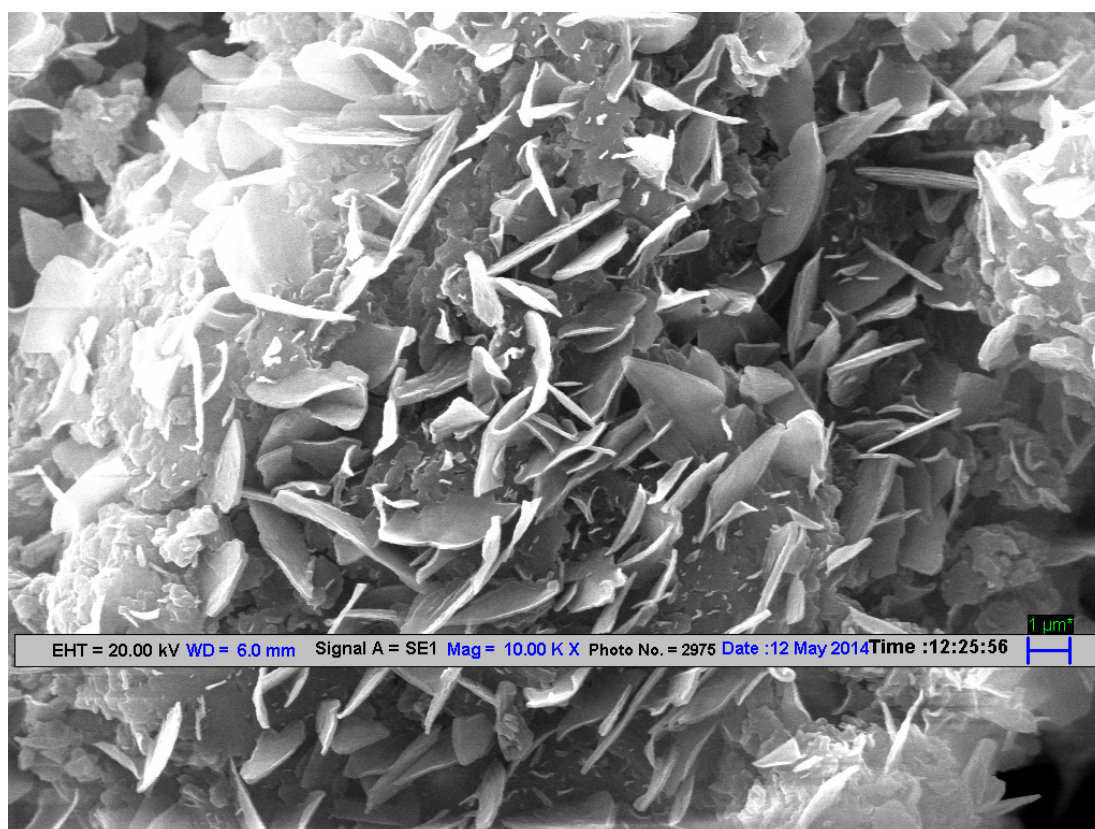


Figure S8. SEM image Pd NPs 5

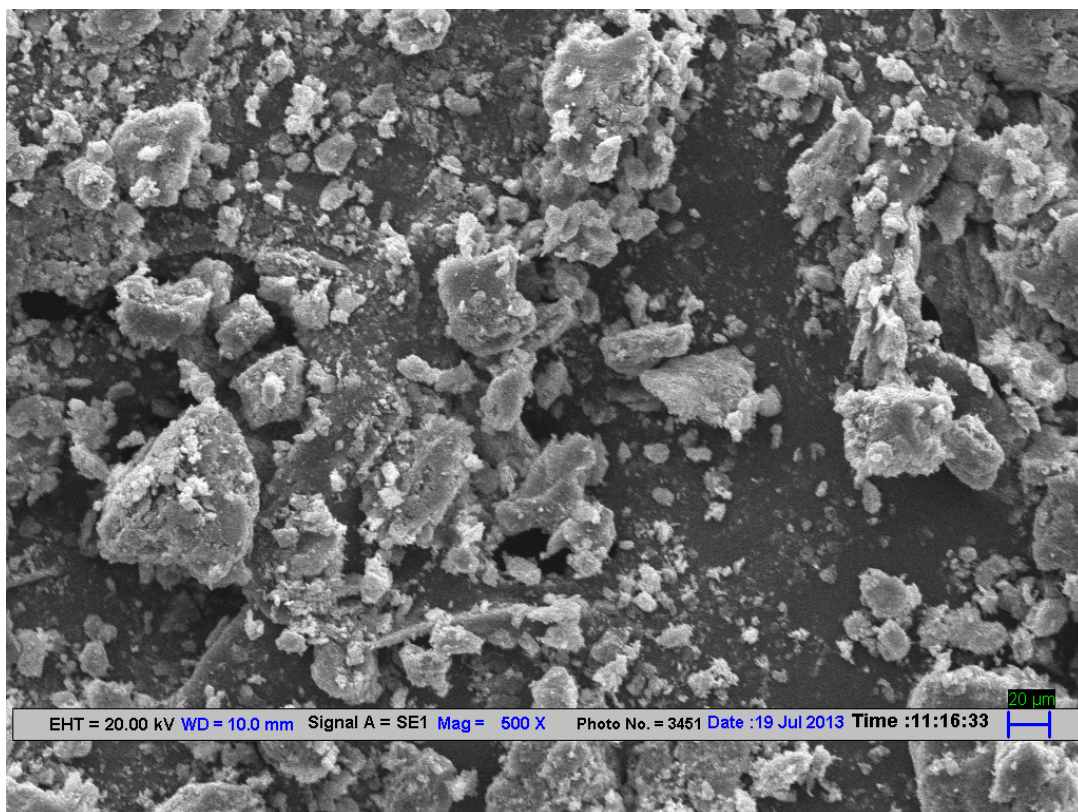


Figure S9. SEM image Pd NPs 6

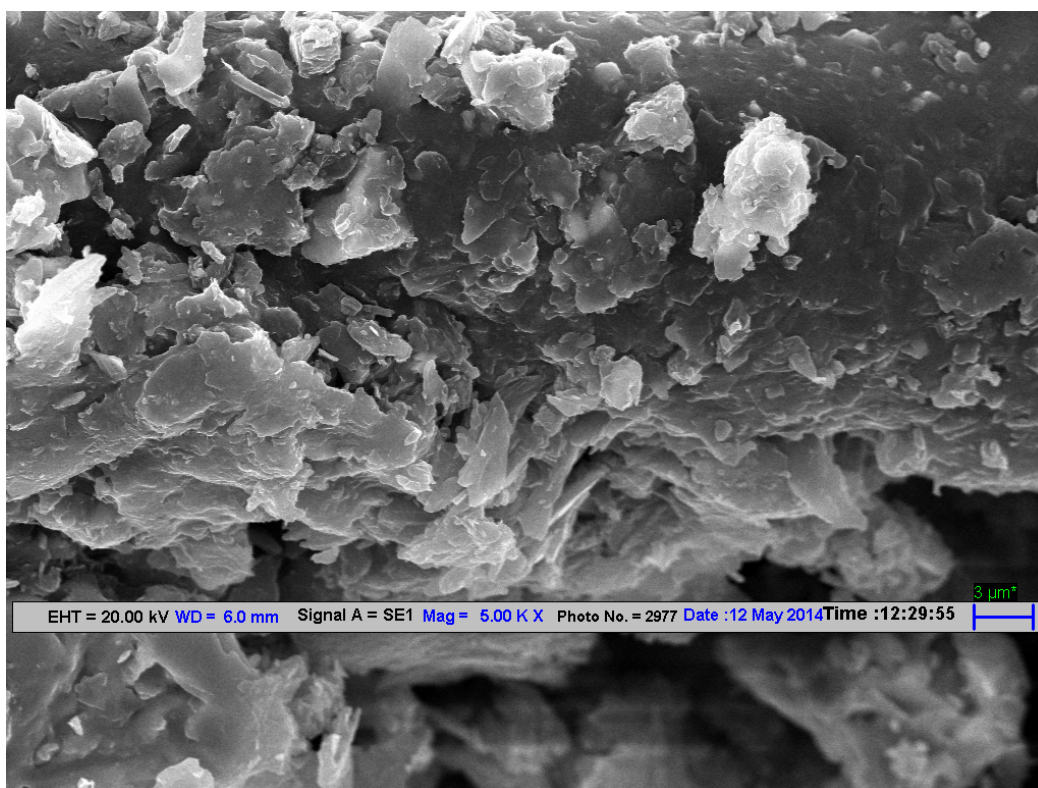


Figure S10. SEM image Pd NPs 7

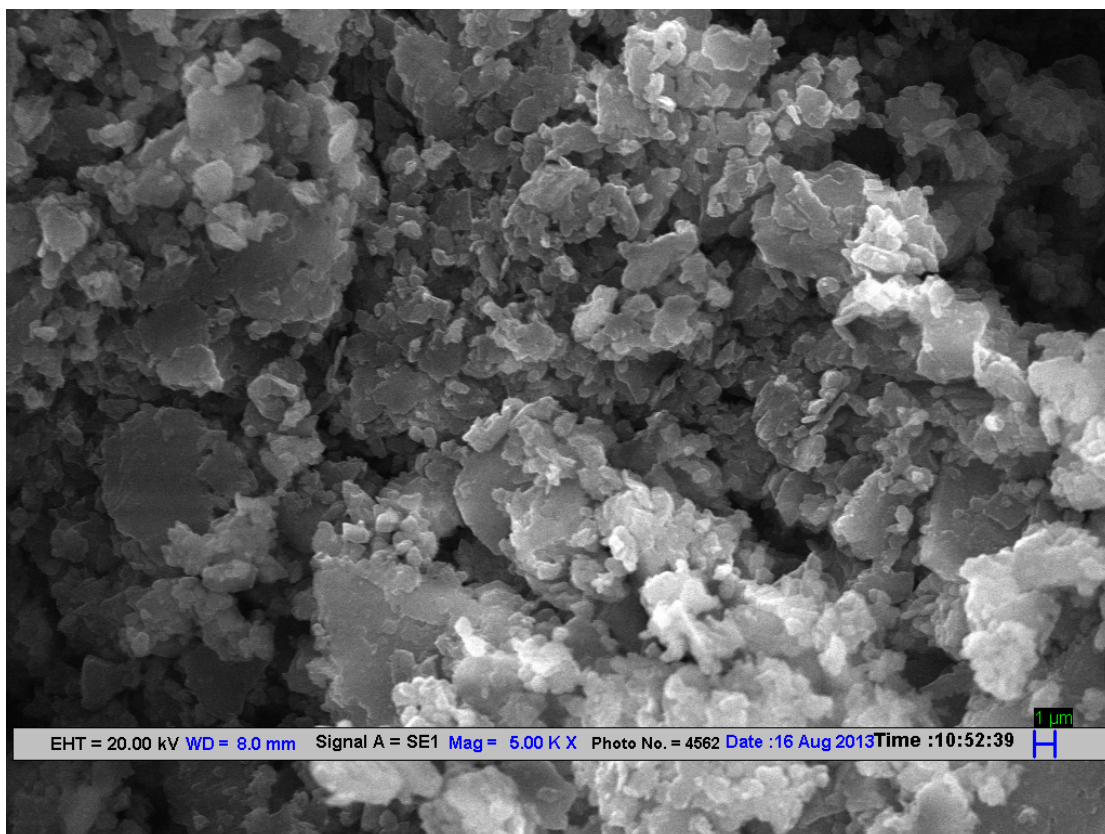
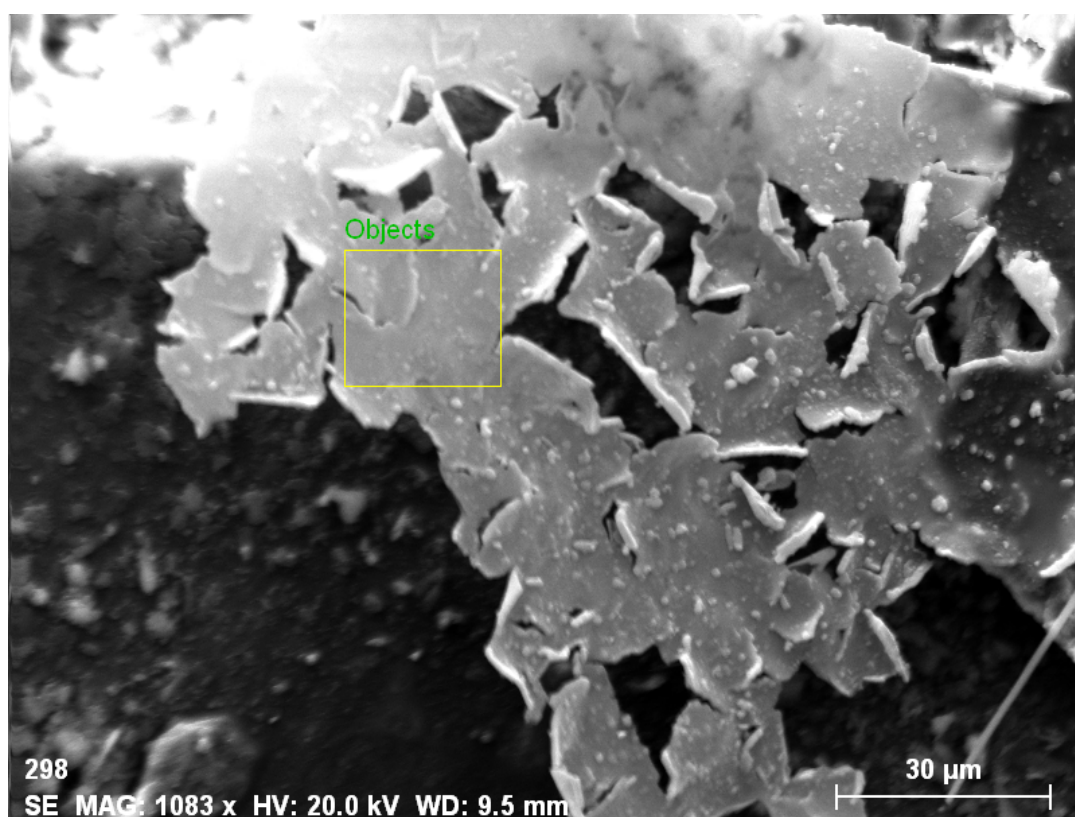


Figure S11. SEM image Pd NPs obtained during Suzuki reaction of complex 1



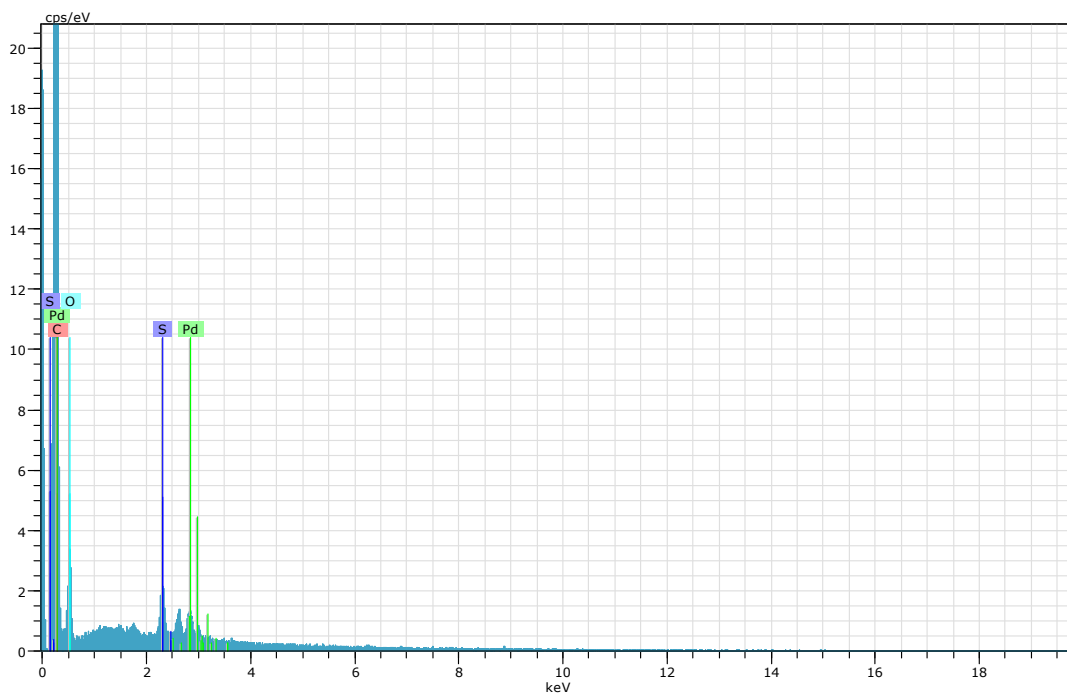
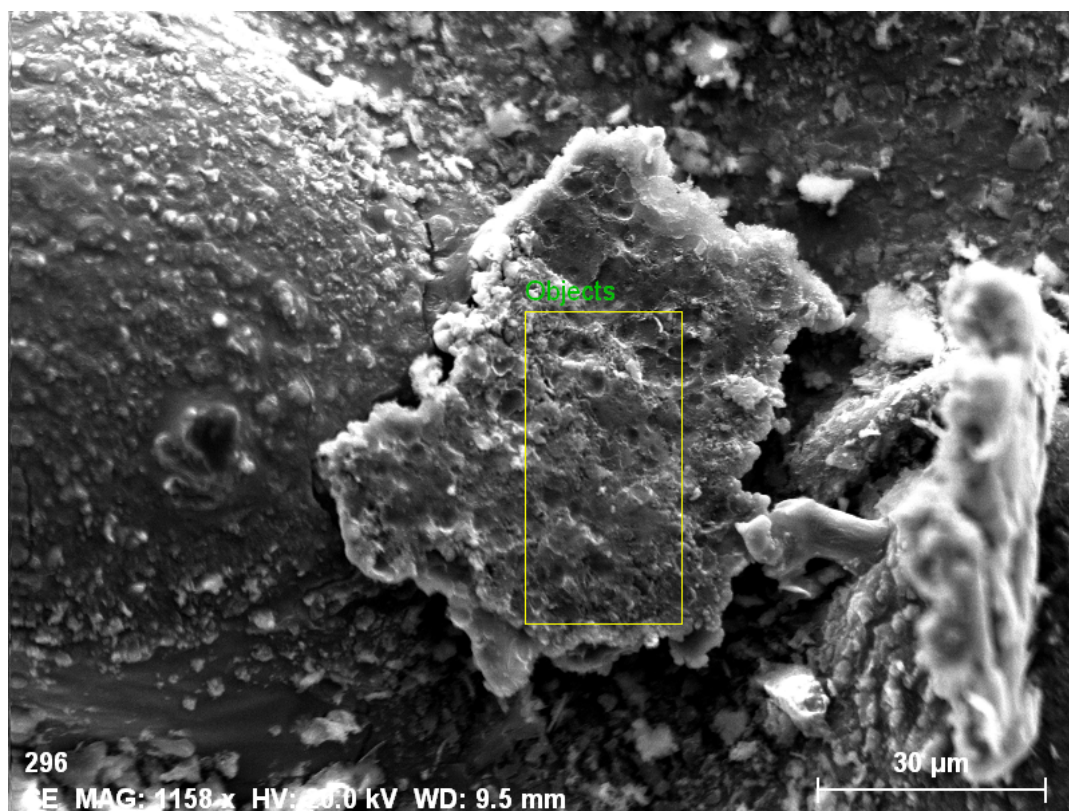


Figure S12. SEM-EDX of Pd NPs 2



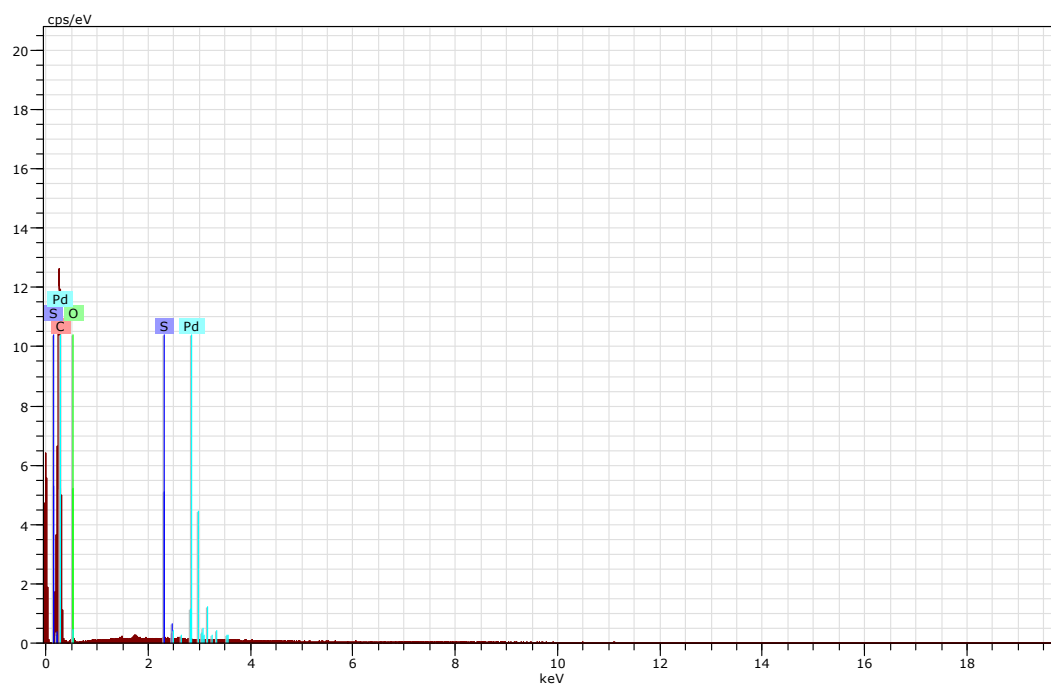
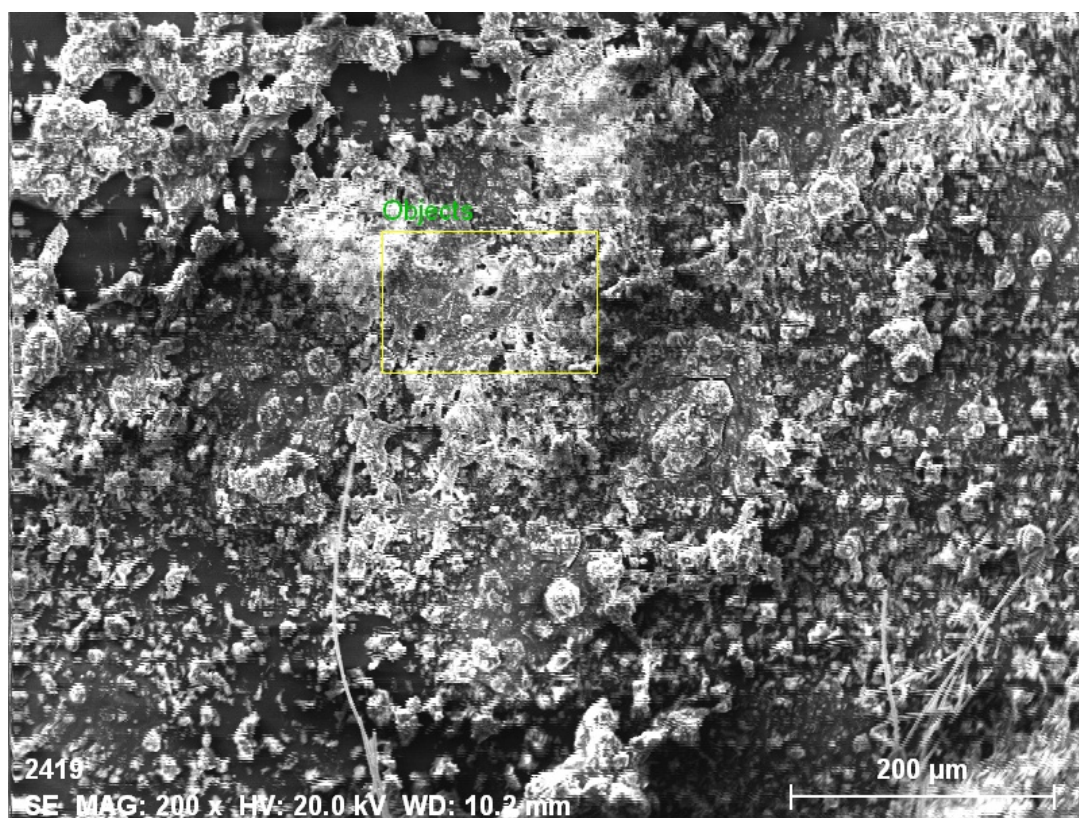


Figure S13. SEM-EDX of Pd NPs 3



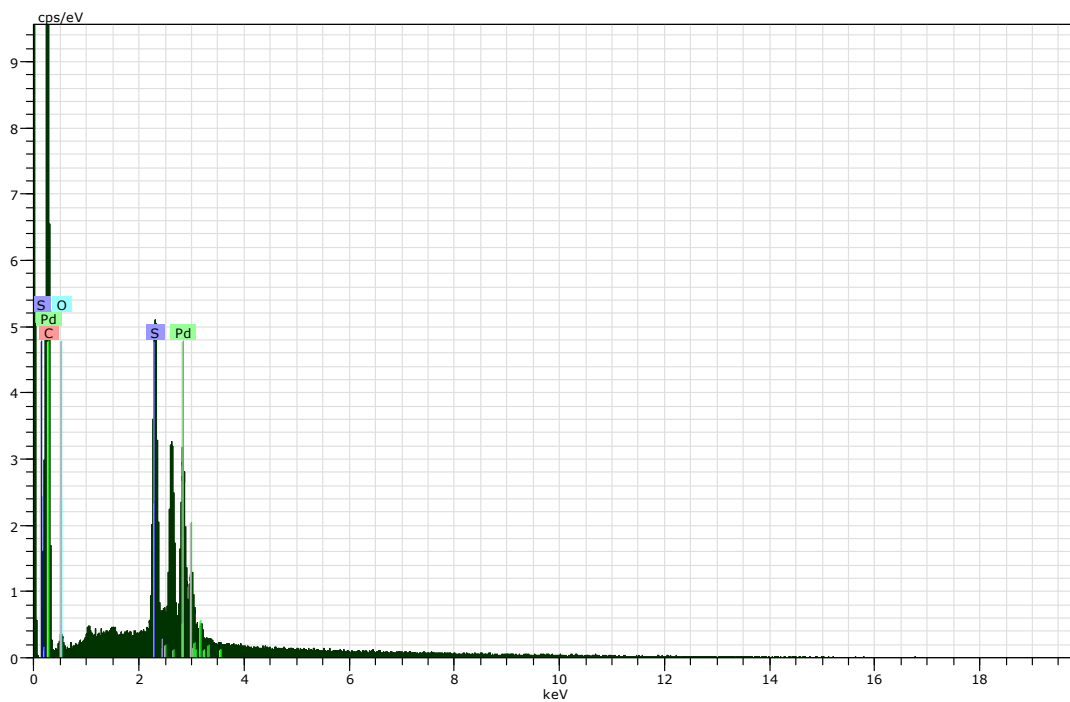
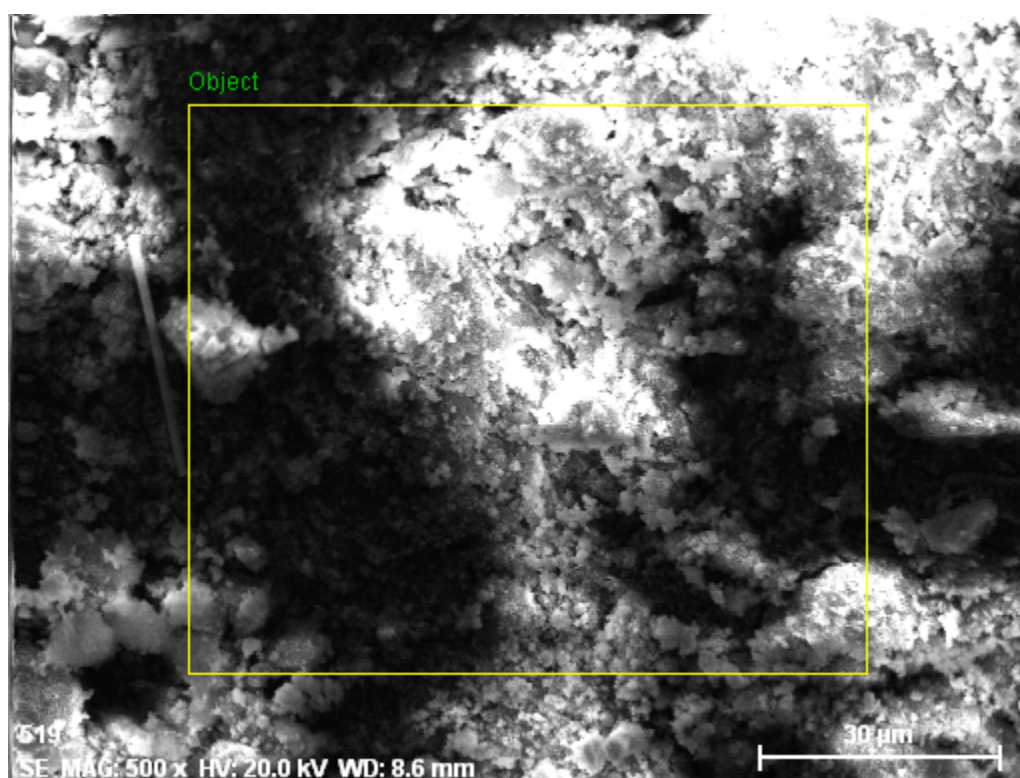
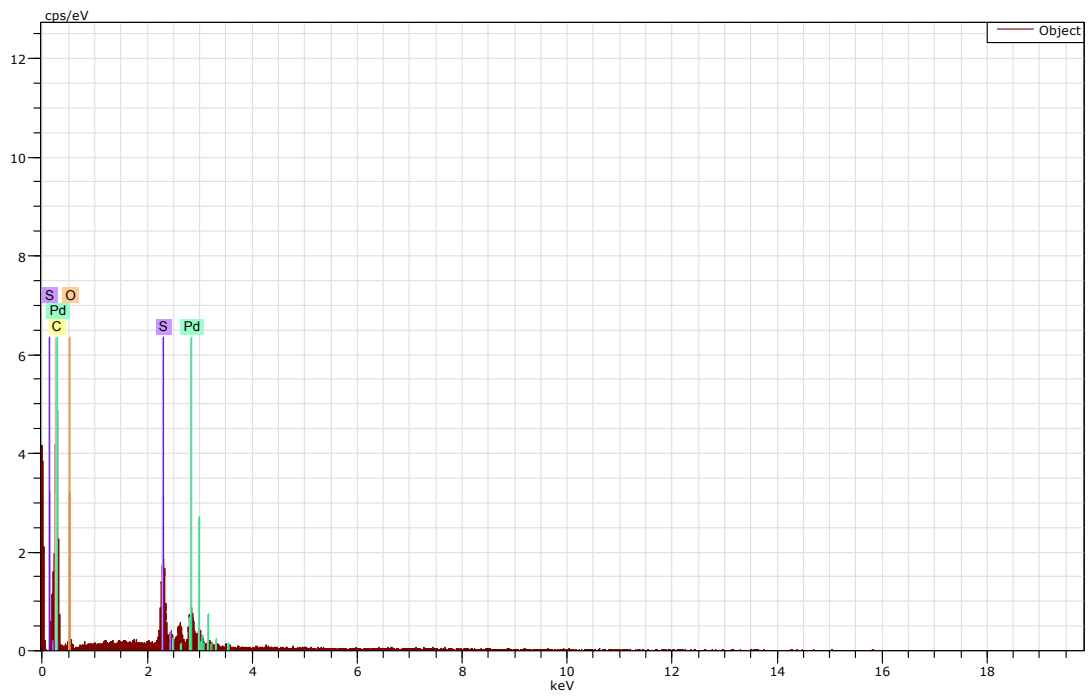


Figure S14. SEM-EDX of Pd NPs 4





Fig

ure S15. SEM-EDX of Pd NPs 5

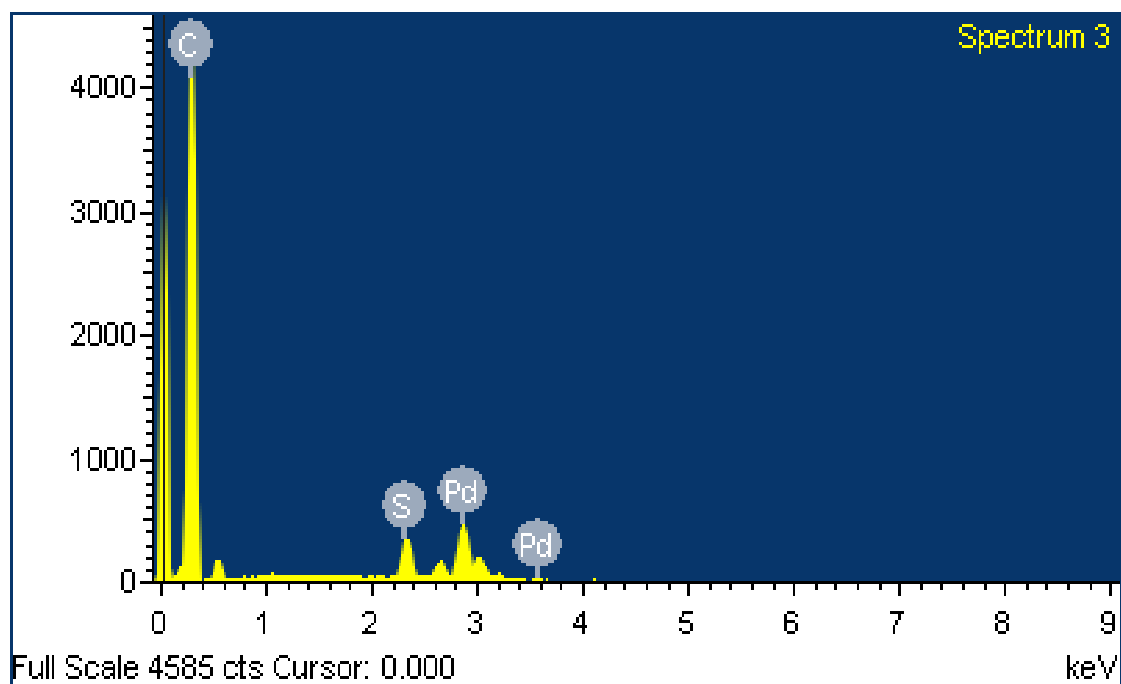
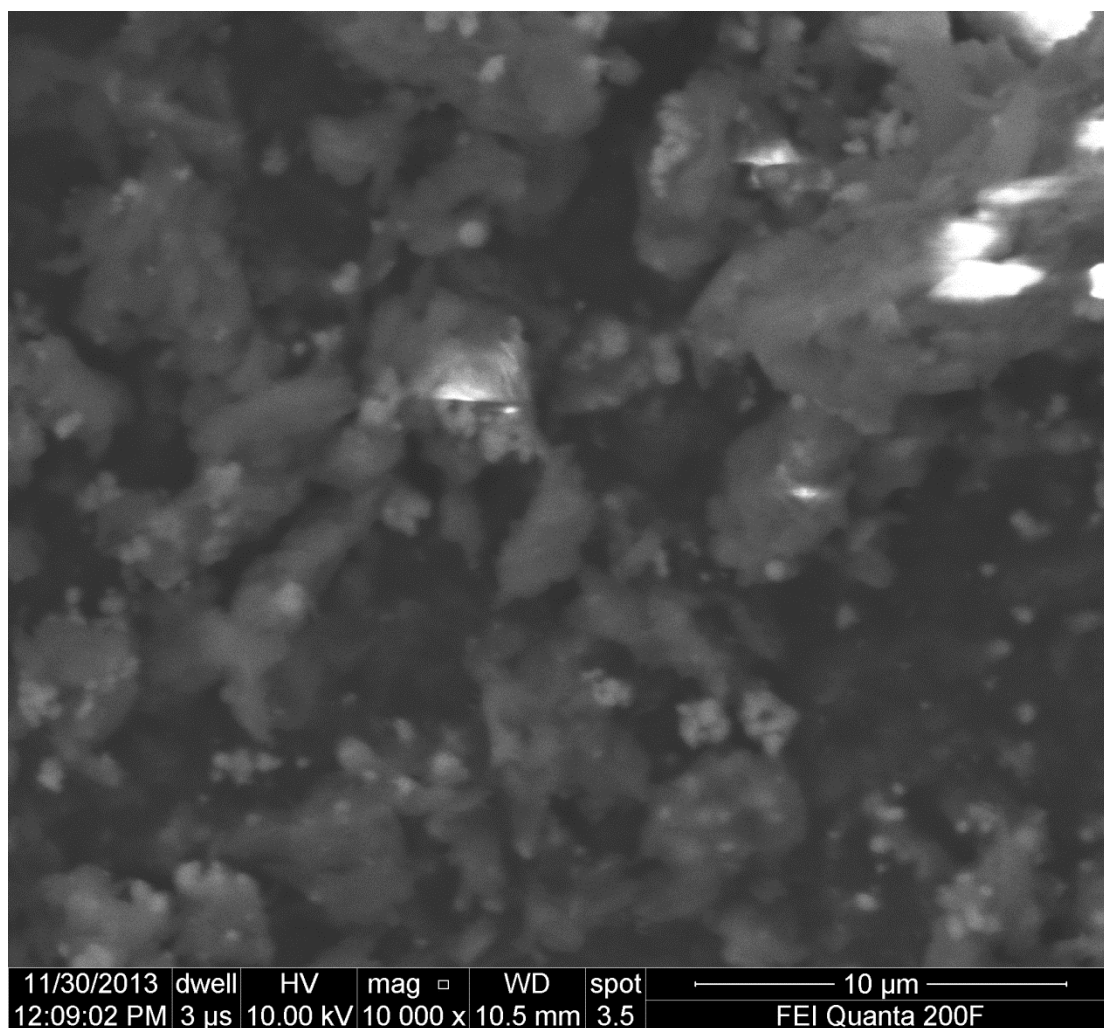


Figure S16. SEM-EDX of Pd NPs 6

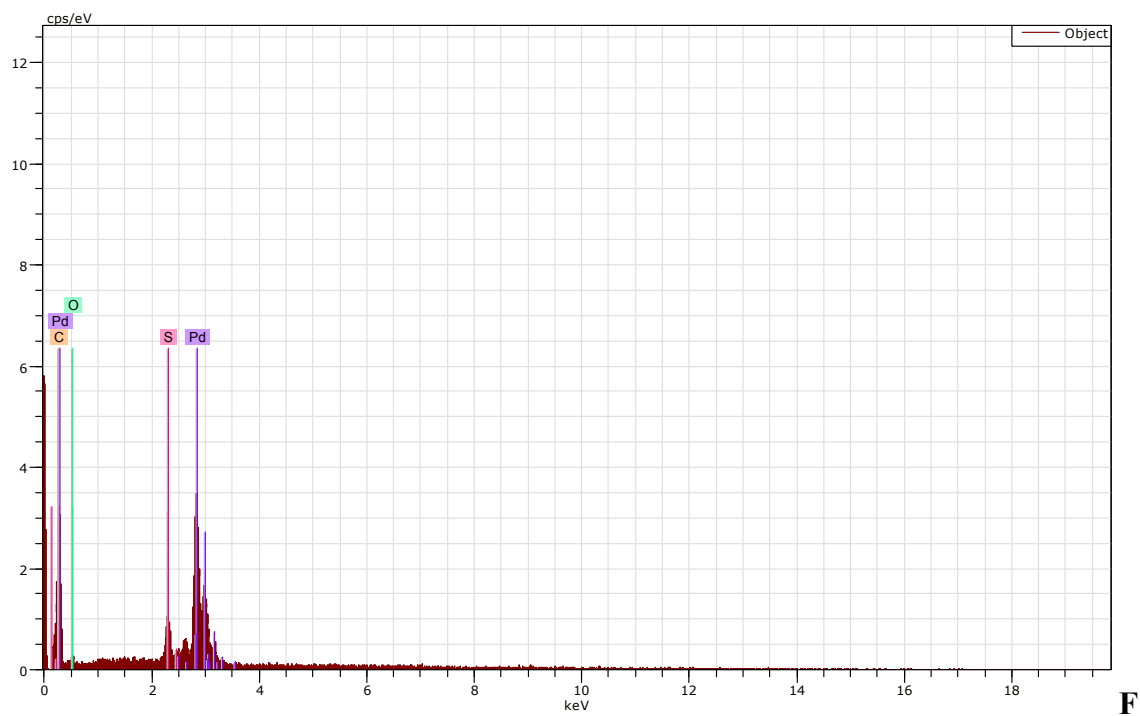
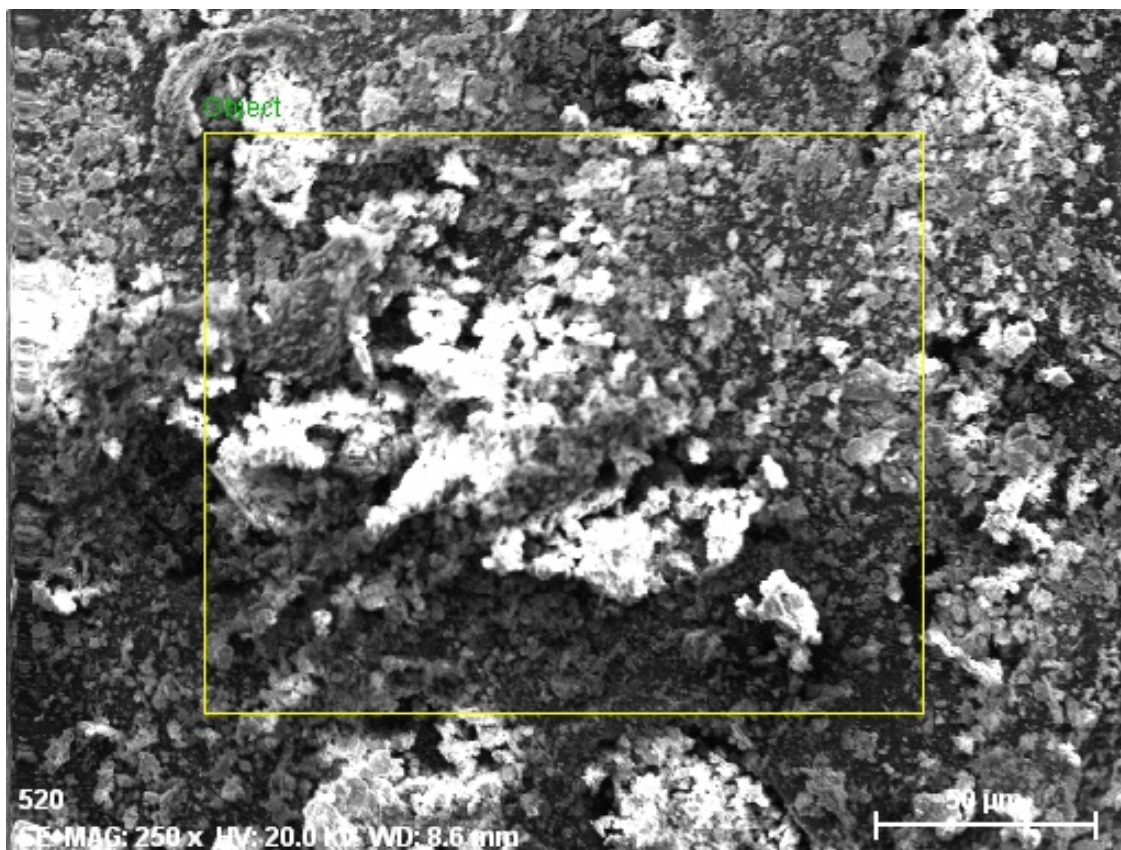


figure S17. SEM-EDX of Pd NPs 7

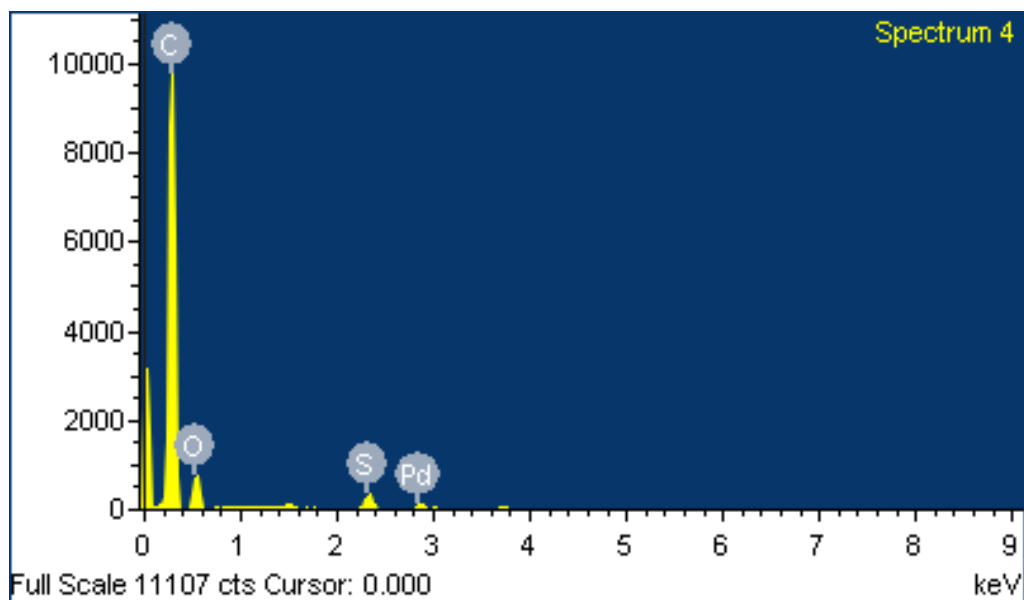
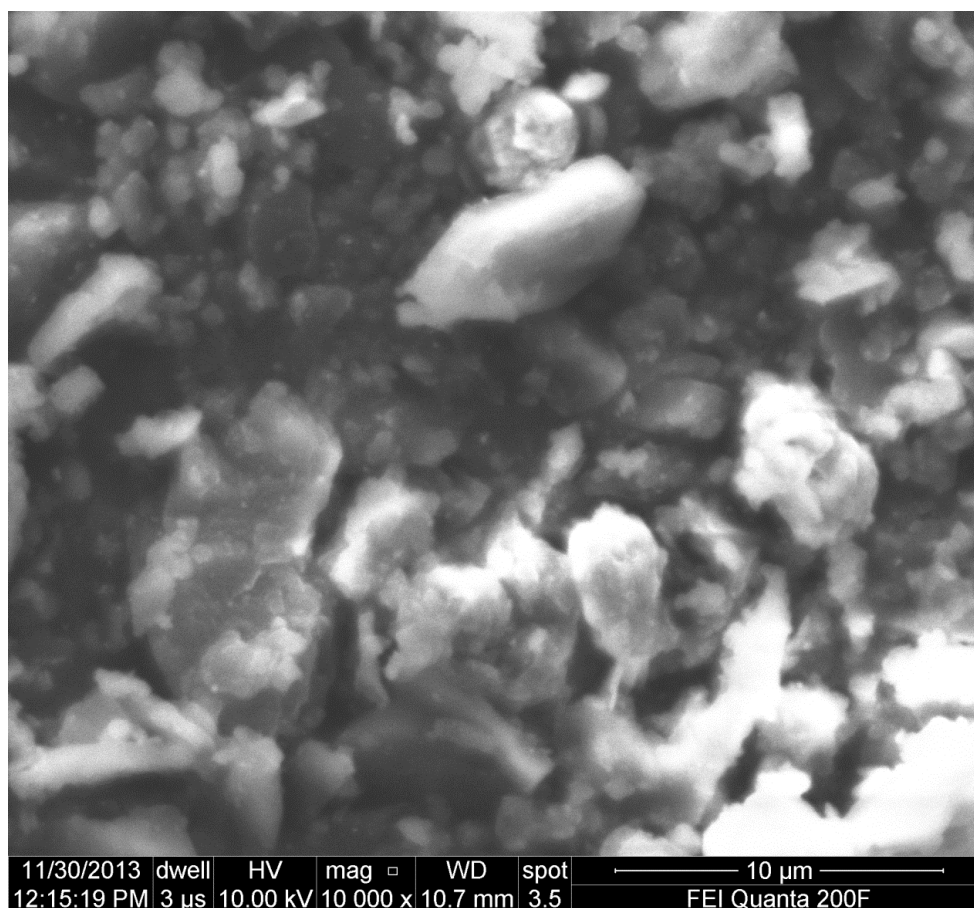


Figure S18. SEM-EDX Pd NPs obtained during Suzuki reaction of complex **1**

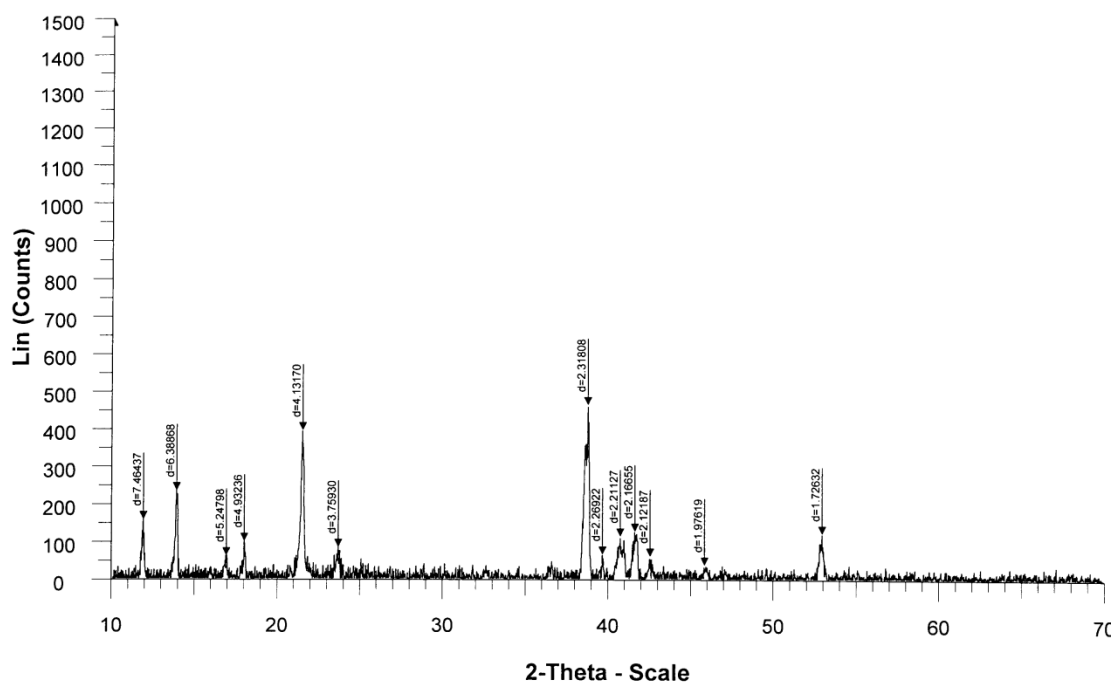


Figure S19. Powder XRD pattern of L1

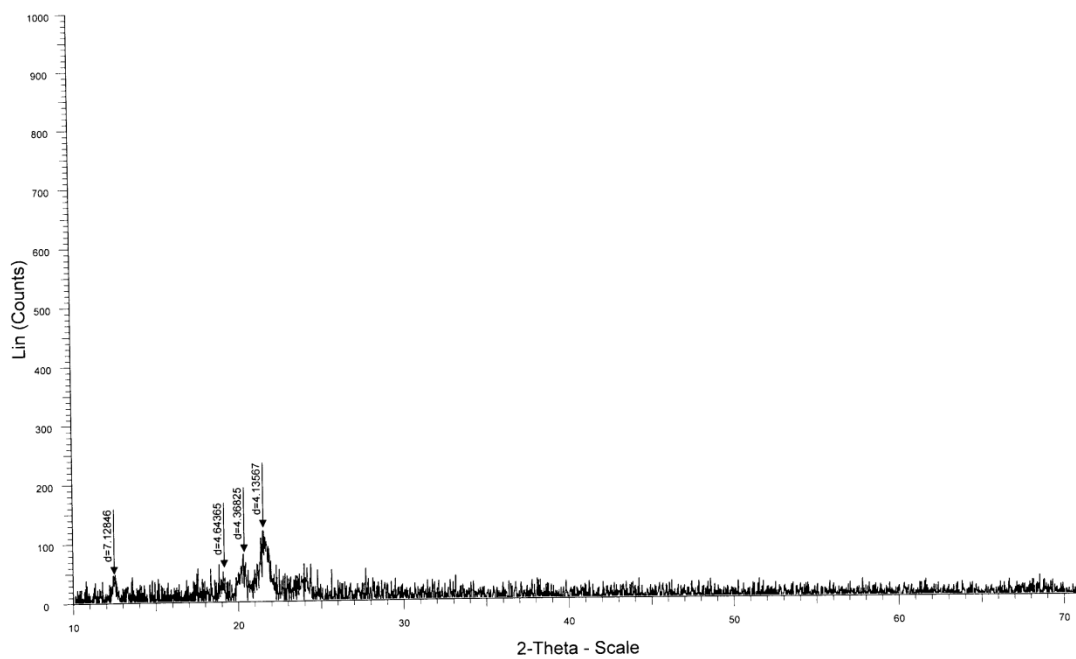


Figure S20. Powder XRD pattern of 2

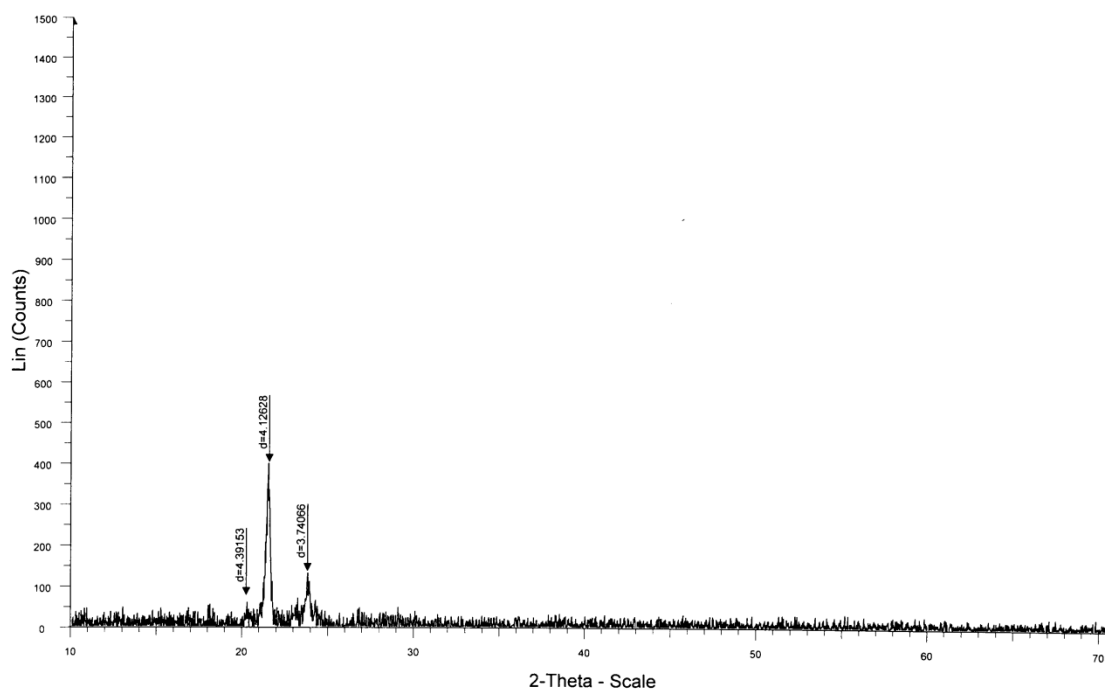


Figure S21. Powder XRD pattern of **3**

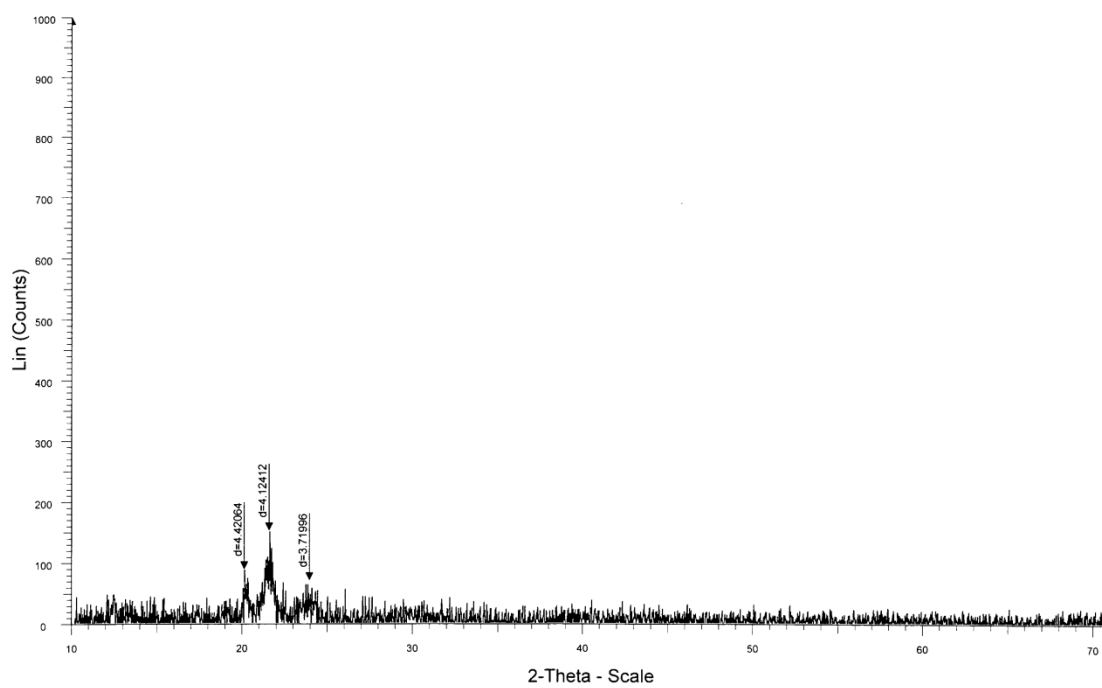


Figure S22. Powder XRD pattern of **4**

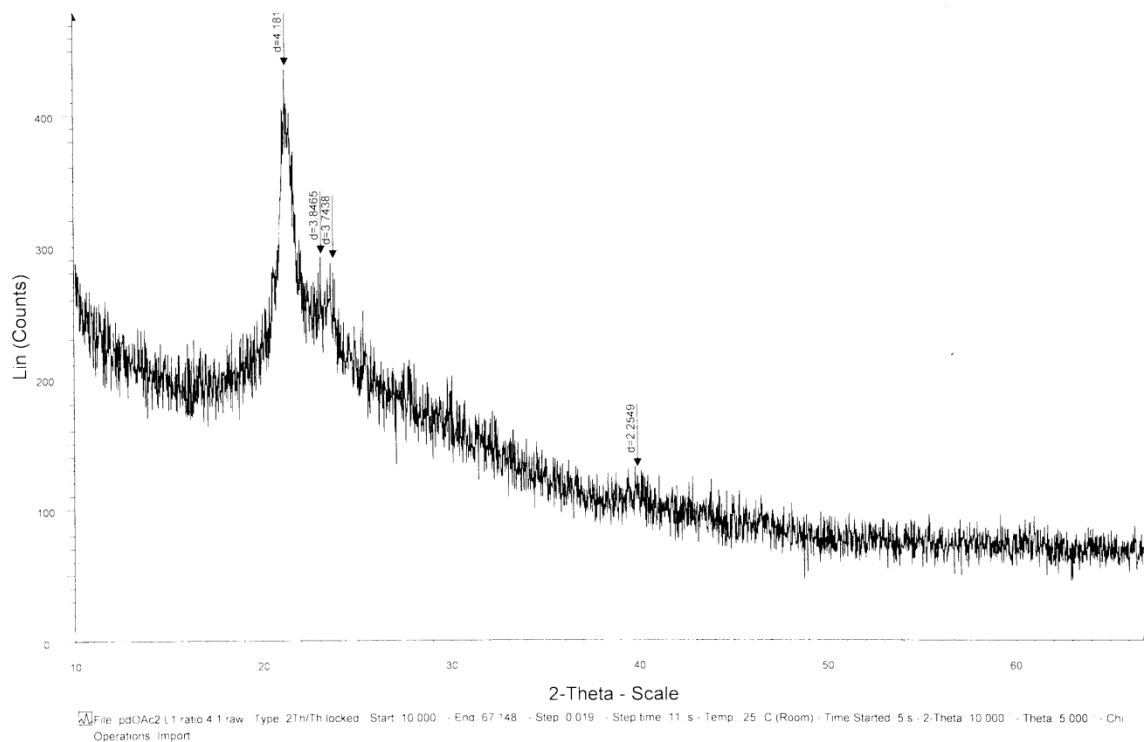


Figure S23. Powder XRD pattern of **5**

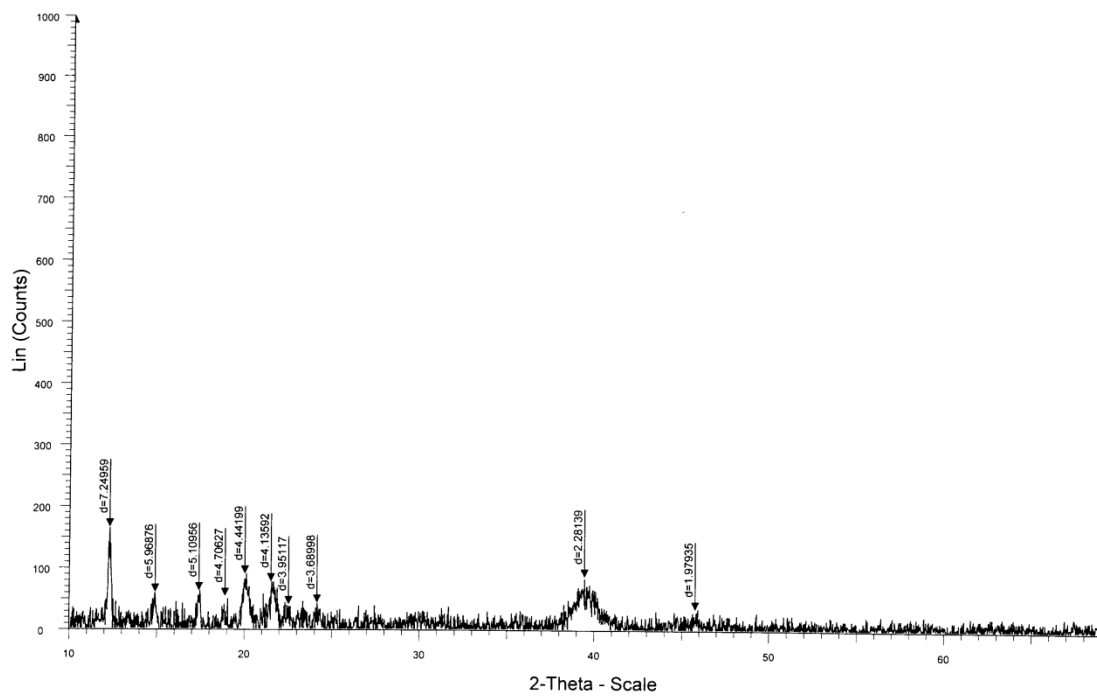


Figure S24. Powder XRD pattern of **6**

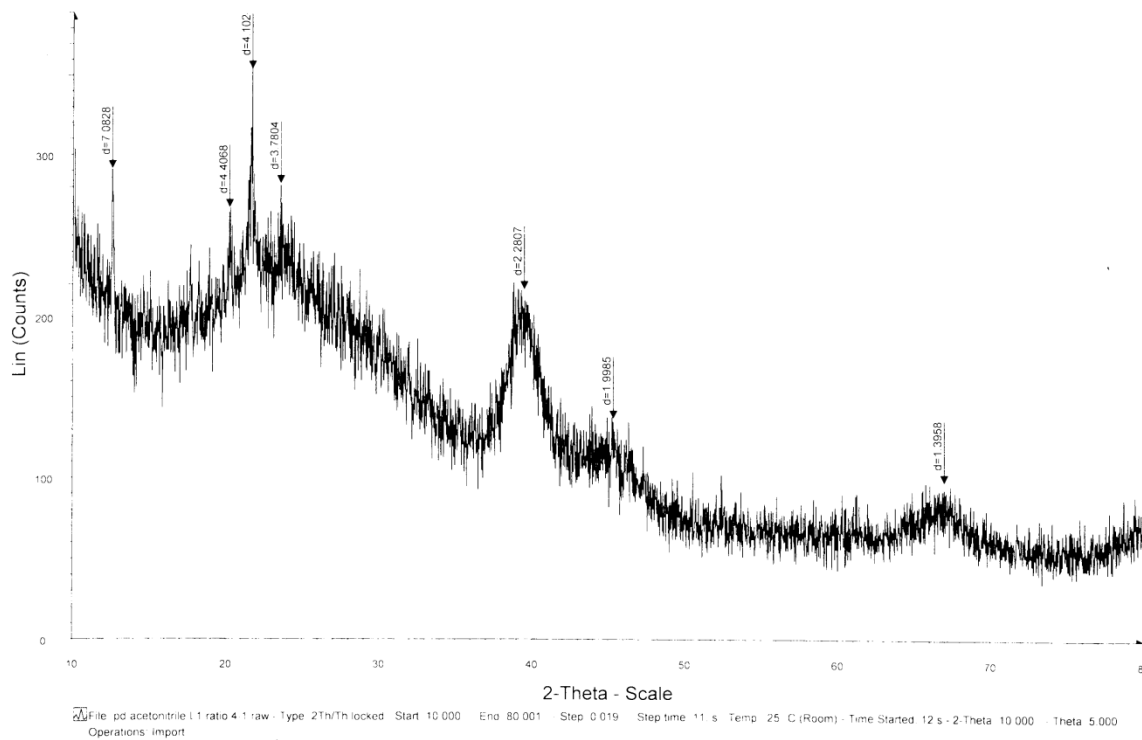


Figure S25. Powder XRD pattern of 7

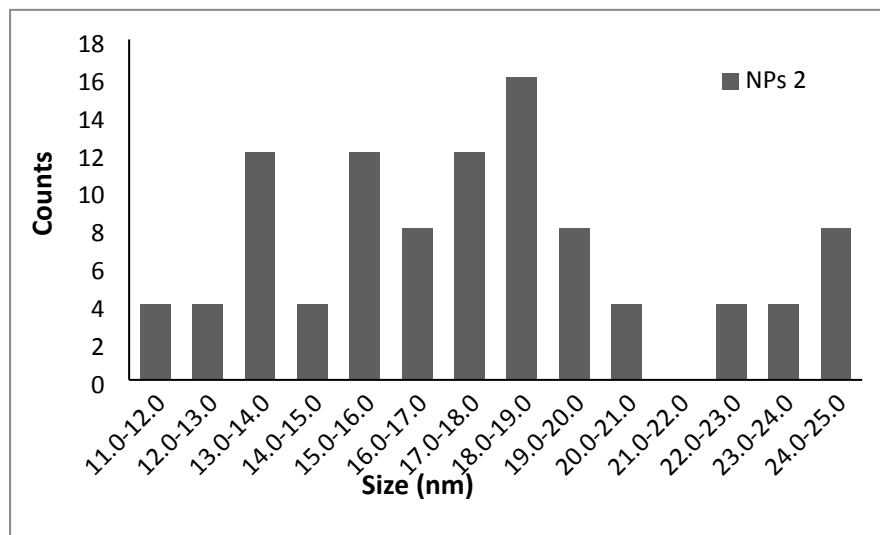


Figure S26. Size distribution graph of NPs 2

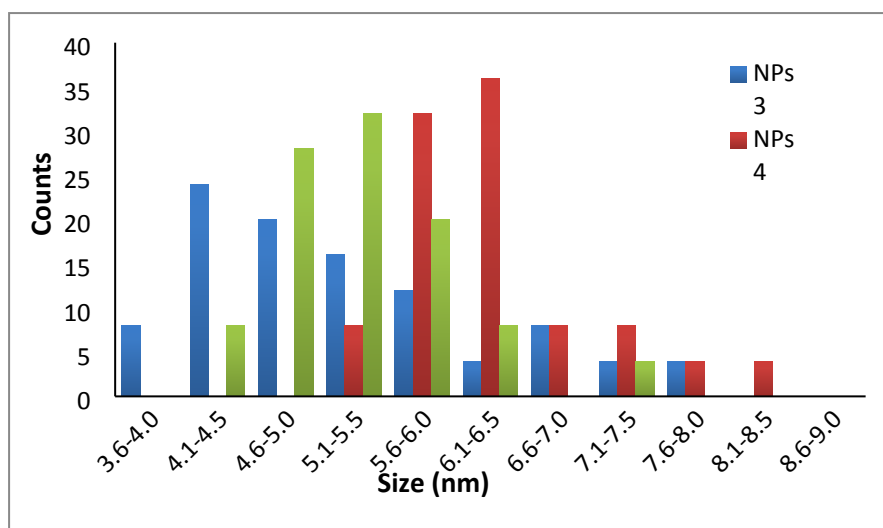


Figure S27. Size distribution graph of NPs 3–4

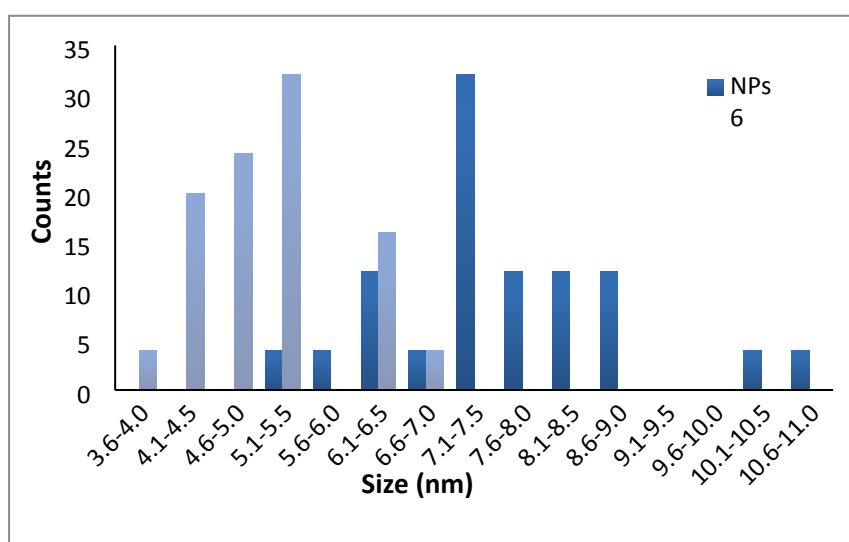
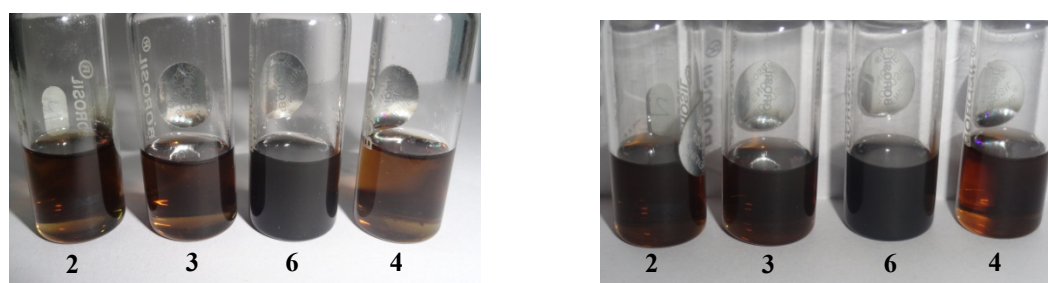


Figure S28. Size distribution graph of NPs 6 and 7



A: Before centrifugation

B: After centrifugation

Figure S29. Images of solutions of Pd NPs in CHCl_3 (2, 3, 6, and 4 respectively)