

Fig. S1.EDX spectra of the electrodeposited Ni-Pd samples.

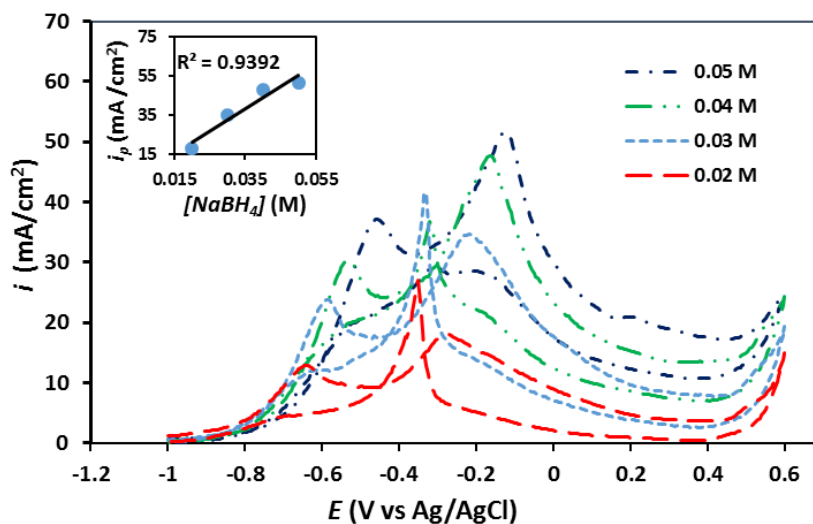


Fig. S2. The cyclic voltammograms of NiPd-1 sample in 1 M NaOH solution for different NaBH_4 concentrations at a scan rate of 100 mV s^{-1} , inset: Variation of anodic peak current density versus NaBH_4 concentration.

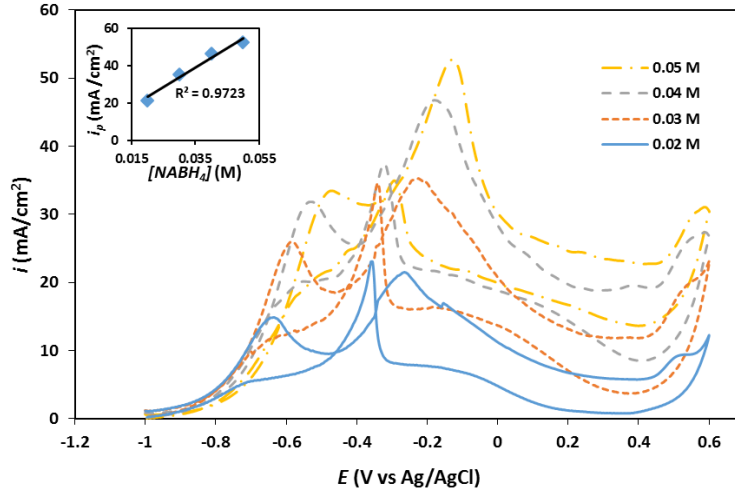


Fig. S3. The cyclic voltammograms of NiPd-2 sample in 1 M NaOH solution for different NaBH₄ concentrations at a scan rate of 100 mV s⁻¹, inset: Variation of anodic peak current density versus NaBH₄ concentration.

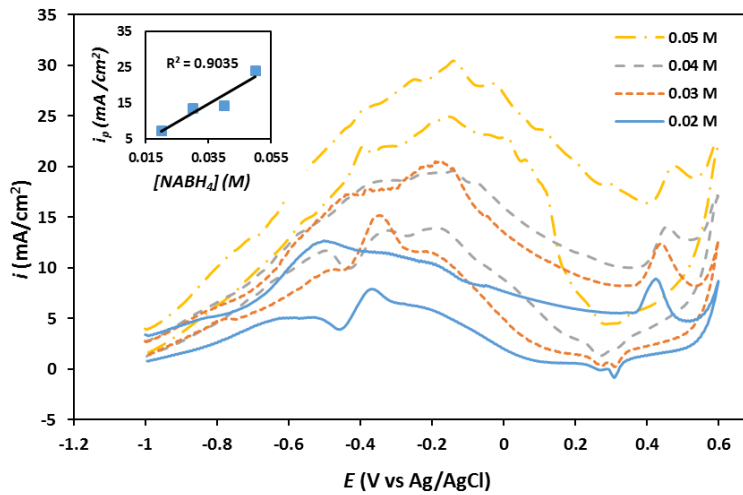


Fig. S4. The cyclic voltammograms of NiPd-3 sample in 1 M NaOH solution for different NaBH₄ concentrations at a scan rate of 100 mV s⁻¹, (b) Variation of anodic peak current density versus NaBH₄ concentration.

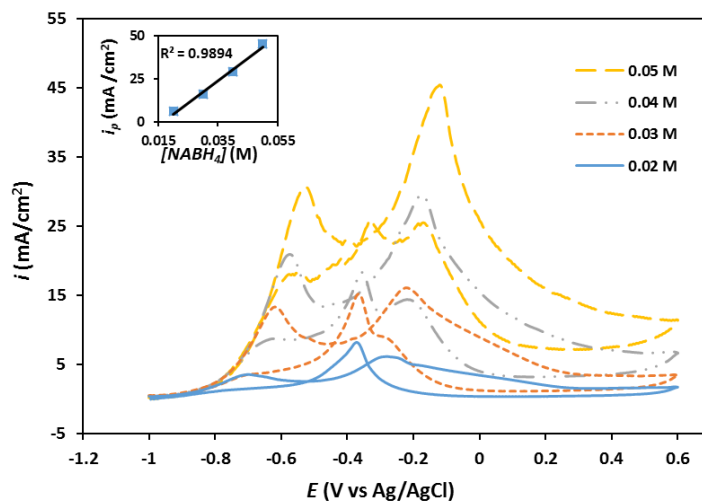


Fig. S5. The cyclic voltammograms of NiPd-4 sample in 1 M NaOH solution for different NaBH₄ concentrations at a scan rate of 100 mV s⁻¹, inset: Variation of anodic peak current density versus NaBH₄ concentration.

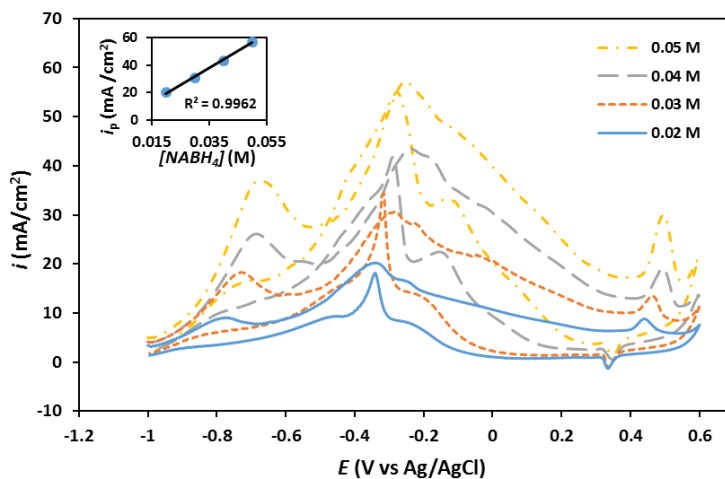


Fig. S6. The cyclic voltammograms of NiPd-5 sample in 1 M NaOH solution for different NaBH₄ concentrations at a scan rate of 100 mV s⁻¹, inset: Variation of anodic peak current density versus NaBH₄ concentration.

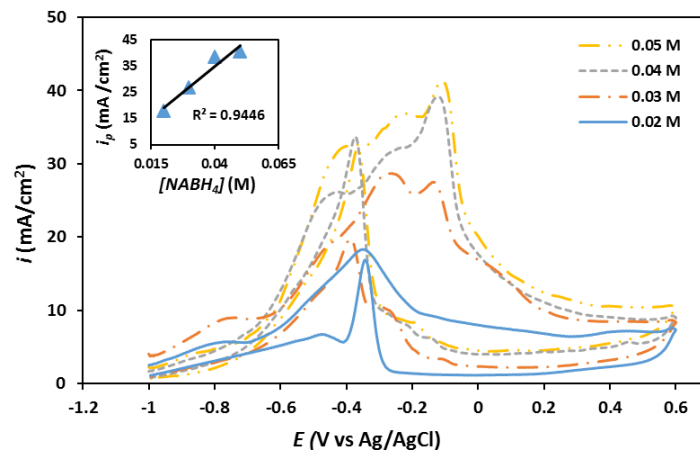


Fig. S7. The cyclic voltammograms of Pd sample in 1 M NaOH solution for different NaBH_4 concentrations at a scan rate of 100 mV s^{-1} , inset: Variation of anodic peak current density versus NaBH_4 concentration.

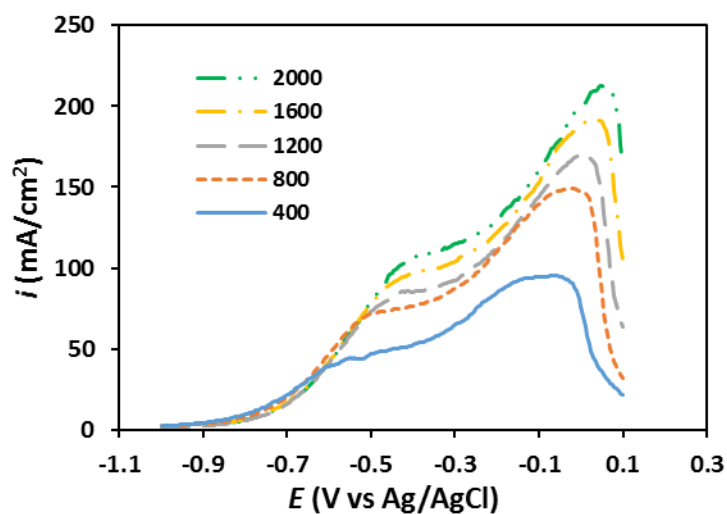


Fig. S8. Linear sweep voltammograms with rotating **disk** electrode for NiPd-2 sample recorded in 1 M NaOH solution containing 0.03 M NaBH_4 at different rotation rates. Potential scan rate is 5 mV s^{-1} .

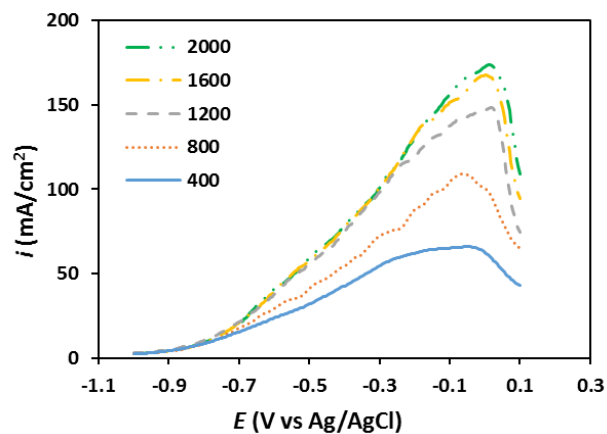


Fig. S9. Linear sweep voltammograms with rotating **disk** electrode for NiPd-3 sample recorded in 1 M NaOH solution containing 0.03 M NaBH₄ at different rotation rates. Potential scan rate is 5 mV s⁻¹.

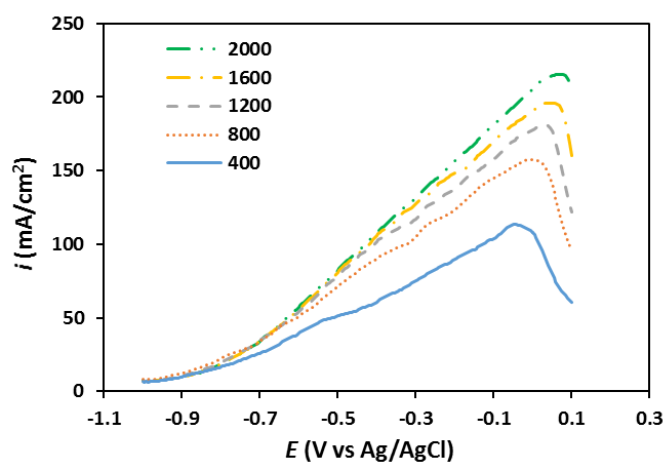


Fig. S10. Linear sweep voltammograms with rotating **disk** electrode for NiPd-4 sample recorded in 1 M NaOH solution containing 0.03 M NaBH₄ at different rotation rates. Potential scan rate is 5 mV s⁻¹.

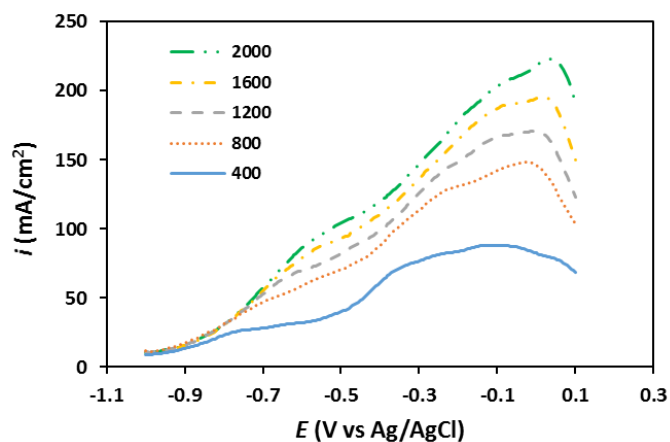


Fig. S11. Linear sweep voltammograms with rotating **disk** electrode for NiPd-5 sample recorded in 1 M NaOH solution containing 0.03 M NaBH₄ at different rotation rates. Potential scan rate is 5 mV s⁻¹.

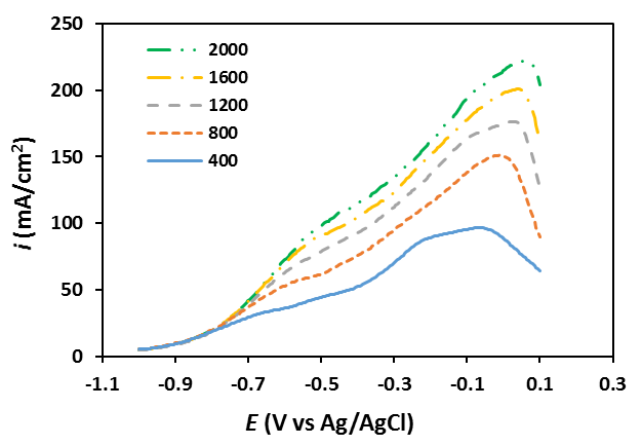


Fig. S12. Linear sweep voltammograms with rotating **disk** electrode for Pd sample recorded in 1 M NaOH solution containing 0.03 M NaBH₄ at different rotation rates. Potential scan rate is 5 mV s⁻¹.