Supplementary Information

Reduced Graphene Oxide Supported Nickel-Palladium Alloy Nanoparticles as a Superior Catalyst for the Hydrogenation of Alkenes and Alkynes under Ambient Conditions

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1. Instrument and technique for GC-MS spectra

The monitoring of the hydrogenation reactions was followed by an Agilent GC-MS instrument equipped with electron impact (EI) technique using helium as carrying gas.
2.1. GC-MS spectra of compound 1
2.2. GC-MS spectra of compound 2
2.3. GC-MS spectra of compound 3
2.4. GC-MS spectra of compound 4

File : C:\msdchem\1\data\YASIN\YCK-131-1-2.D
Operator : YASIN
Acquired : 25 Feb 2015 18:37 using AcqMethod BALCILAB.M
Instrument : GCMS
Sample Name: YCK-131-1-2
Vial Number: 1
2.5. GC-MS spectra of compound 5
2.6. GC-MS spectra of compound 6
2.7. GC-MS spectra of compound 7
2.8. GC-MS spectra of compound 8
2.9. GC-MS spectra of compound 9
2.10. GC-MS spectra of compound 10
2.11. GC-MS spectra of compound 11
2.12. GC-MS spectra of compound 12
2.13. GC-MS spectra of compound 13
2.14. GC-MS spectra of compound 14
2.15. GC-MS spectra of compound 15
2.16. GC-MS spectra of compound 16
2.17. GC-MS spectra of compound 17
2.18. GC-MS spectra of compound 18

File: C:\msdchem\1\data\YASIN\YCK-123-3.D
Operator: YASIN
Acquired: 28 Jan 2015 14:45 using AcqMethod BLCILAB.M
Instrument: GCMS
Sample Name: YCK-123-3
Vial Number: 2
2.19. GC-MS spectra of compound 19
2.20. GC-MS spectra of compound 20
2.21. GC-MS spectra of compound 21
2.22. GC-MS spectra of compound 22
2.23. GC-MS spectra of compound 23
2.24. GC-MS spectra of compound 24
2.25. GC-MS spectra of compound 25
2.26. GC-MS spectra of compound 26
2.27. GC-MS spectra of compound 27
2.28. GC-MS spectra of compound 2 (transformation of compound 27 to compound 2)
2.29. GC-MS spectra of compound 28
2.30. GC-MS spectra of compound 29
2.31. GC-MS spectra of compound 30
2.32. GC-MS spectra of compound 31
2.33. GC-MS spectra of compound 32
2.34. GC-MS spectra of compound 33
3. A representative TEM image and XRD of commercial Pd/C catalyst

**Figure S1.** A representative TEM image of commercial Pd/C (10 wt.%) purchased by ACROS Organics (Code:195030500, CAS:7440-05-3).

**Figure S2.** XRD pattern of commercial Pd/C catalyst
3. XRD pattern of G-Ni$_{30}$Pd$_{70}$ catalyst

Figure S3. XRD pattern of G-Ni$_{30}$Pd$_{70}$ catalyst