CLAIMS:

1. A method for hydrogenating a feedstock, comprising:

exposing a hydrocarbonaceous feed to a supported catalyst under effective hydrogenation conditions, said hydrogenation comprising saturation of aromatics and/or olefins, to form a hydrogenated effluent, the supported catalyst comprising a Group VIII noble metal on a silica support, the supported catalyst further comprising about 0.3 wt % to about 2.5 wt % alumina deposited on the silica support; wherein the effective hydrogenation conditions comprise a temperature from about 75ºC to about 360ºC; a hydrogen partial pressure from about 100 psig (0.7 MPa) to about 3000 psig (20.7 MPa); a liquid hourly space velocity from about 0.1 hr^{-1} to about 5 hr^{-1} LHSV; and a hydrogen treat gas rate of from about 35.6 m^3/m^3 to about 1781 m^3/m^3 (200 SCF/bbl to 10,000 SCF/bbl).

2. The method of claim 1, wherein the hydrocarbonaceous feed comprises about 100 wppm of sulfur or less.

3. The method of claim 1, wherein the hydrocarbonaceous feed comprises about 50 wppm of sulfur or less.

4. The method of claim 3, wherein the supported catalyst comprises about 0.5 wt % to about 2.1 wt % alumina deposited on the silica support.

5. The method of claim 1, wherein the hydrocarbonaceous feed comprises at least about 100 wppm of sulfur.

6. The method of claim 5, wherein the supported catalyst comprises about 0.5 wt % to about 1.5 wt % alumina deposited on the silica support.

7. The method of claim 1, wherein the supported catalyst comprises about 0.1 wt % to about 5.0 wt % of the Group VIII noble metal.

8. The method of claim 1, wherein the Group VIII noble metal comprises Pt.

9. The method of claim 8, wherein the Group VIII noble metal further comprises one or more of Pd, Ir, or Rh, a molar ratio of Pt to the one or more of Pd, Ir, or Rh being at least about 1:1.

10. The method of claim 1, wherein the alumina is deposited on the silica support by impregnation.

11. The method of claim 1, wherein the supported catalyst comprises amorphous silica, a mesoporous silica, or a combination thereof.

12. A method for hydrogenating a feedstock, comprising:

exposing a hydrocarbonaceous feed containing at least about 100 wppm sulfur to a supported catalyst under effective hydrogenation conditions, said hydrogenation comprising saturation of aromatics and/or olefins, to form a hydrogenated effluent, the supported catalyst comprising a Group VIII noble metal on a silica support, the supported catalyst further comprising about 0.5 wt % to about 2.5 wt % alumina deposited on the silica support; wherein the effective hydrogenation conditions comprise a temperature from about 75ºC to about 360ºC; a hydrogen partial pressure from about 100 psig (0.7 MPa) to about 3000 psig (20.7 MPa); a liquid hourly space velocity from about 0.1 hr^{-1} to about 5 hr^{-1} LHSV; and a hydrogen treat gas rate of from about 35.6 m^3/m^3 to about 1781 m^3/m^3 (200 SCF/bbl to 10,000 SCF/bbl).

13. The method of claim 12, wherein the supported catalyst comprises about 0.5 wt % to about 1.5 wt % alumina deposited on the silica support.

14. The method of claim 12, wherein the supported catalyst comprises about 0.1 wt % to about 5.0 wt % of the Group VIII noble metal, the Group VIII noble metal comprising Pt, Pd, or a combination thereof.

15. The method of claim 12, wherein the supported catalyst comprises alumina deposited by impregnation on an amorphous silica support, a mesoporous silica support, or a combination thereof.