13. The method of claim 1, where the step of processing the support precursor material comprises hydrothermally treating the support precursor material.

14. The method of claim 13, where hydrothermally treating the support precursor material comprises exposing the support precursor material to a pressure of from 2 bar to 4 bar and at a temperature of from 450°C to 600°C for 0.5 hours to 3 hours.

15. The method of claim 13, where the hydrothermal treatment produces self-generated steam.

16. The method of claim 1, where the step of impregnating the support material comprises contacting the support material with a solution comprising one or more metal catalyst precursors, where the metal catalyst precursors comprise one or more of Ni, W, Mo, Co.

17. A zeolite supported catalyst comprising:

from 20 wt.% to 75 wt.% of porous alumina;

from 20 wt.% to 30 wt. % of metal catalyst material; and

from 5 wt.% to 50 wt.% of nano-sized zeolite;

where:

the nano-sized zeolite has an average size of less than 100 nm; and

the zeolite supported catalyst has a surface area of at least 180 m^2/g.

18. The zeolite supported catalyst of claim 17, where the zeolite supported catalyst has a pore volume of at least 0.45 mL/g

19. The zeolite supported catalyst of claim 17, where the zeolite supported catalyst has a pore size of at least 9.5 nm.

20. The zeolite supported catalyst of claim 17, where the metal catalyst material comprises one or more of WO_3, MoO_3, NiO, and CoO.