CLAIMS

1. A method for deoxygenating a feedstock comprised of natural oils or greases or derivatives thereof which comprise triglycerides or free fatty acids, the method comprising the steps of:

providing a catalyst comprising a support predominantly comprised of alumina, metal compounds provided on the support, and at least one promoter metal,

wherein the metal compounds comprise Mo and at least one selected from the group consisting of Ni and Co,

wherein the at least one promoter metal is selected from the group consisting of Cu and Cr, and

wherein the promoter metal is present in the catalyst in an amount calculated as an oxide between about 0.5 wt% and about 10.0 wt%; and

deoxygenating the feedstock by contacting the feedstock with the catalyst.

2. The method of claim 1, wherein the promoter metal is Cu.

3. The method of claim 1, wherein the promoter metal is Cr.

4. The method of claim 1, wherein the promoter metal is present in the catalyst formulation in an amount calculated as an oxide between about 1.4 wt% and about 3.0 wt%

5. The method of claim 1, wherein the promoter metal is introduced prior to an extrusion stage of a catalyst manufacturing process.

6. The method of claim 1, where the support further comprises at least one oxide from the group comprising silica, titania and zirconia.

7. The method of claim 1, wherein the support comprises silica.

8. The method of claim 1, wherein the catalyst comprises phosphorus.

9. The method of claim 1, wherein feedstock comprises triglycerides.

10. The method of claim 1, wherein the feedstock comprise free fatty acids.

11. The method of claim 1, wherein the feedstock has been subjected to one or more pretreatment steps to reduce the level of contaminants comprising any of the group consisting of Na, Ca, Fe, Mg, K and P.

12. The method of claim 1, wherein the step of contacting the feedstock with the catalyst is performed at a temperature between about 500 °F and 650 °F.

13. The method of claim 1, wherein the step of contacting the feedstock with the catalyst is performed at a pressure of about 450 psig to 1500 psig.

14. The method of claim 1, wherein the step of contacting the feedstock with the catalyst is performed at a LHSV of 0.5 to 2.0 h^{-1}.