What is claimed is:

1. A method for preparing a noble metal hydrogenation catalyst, characterized in that said method comprises:
step 1: preparing a carrier from a molecular sieve having a 10-member ring structure and an amorphous porous material, wherein the molecular sieve having a 10-member ring structure is selected from one or more of ZSM-5, SAPO-11, EU-1, ITQ-13, ZSM-22, MCM-22, NU-87, and ZSM-23, the mass fraction of the amorphous porous material contained in the carrier is 10 to 90 wt%, and the mass faction of the molecular sieve having a 10-member ring structure contained therein is 5 to 80 wt%;
step 2: preparing a noble metal impregnation solution from one or more of compounds of noble metals selected from Pt, Pd, Ru, Rh, Re, and Ir and deionized water or an acid solution, wherein the concentration of the noble metal in the impregnation solution is in a concentration gradient ranging from 0.05 to 5.0 wt%; and
step 3: preparing a hydrogenation catalyst having a noble metal mass fraction of 0.05 to 2.0 wt% by incipient impregnation:
sequentially impregnating the carrier with the impregnation solutions from low to high concentrations during the carrier impregnation process, or impregnating the carrier with the noble metal impregnation solution at a low concentration ranging from 0.05 to 0.5 wt% and gradually increasing the concentration of the noble metal impregnation solution to 2.0 to 5.0 wt% in the impregnation process, followed by homogenization for 10 minutes to 3 hours, drying at 90 to 140°C for 3 to 10 h, and calcination at 450 to 600°C for 3 to 10 h.

2. The method according to claim 1, characterized in that the amorphous porous material is selected from one or more of Al_2O_3, SiO_2, Al_2O_3-SiO_2, TiO_2, Al_2O_3-TiO_2, ZrO_2, or Al_2O_3-ZrO_2.

3. The method according to claim 1, characterized in that the noble metal is selected from one or two of Pt, Pd, Ru, and Re compounds, and the mass fraction of the noble metal contained in the catalyst is preferably 0.1 to 1.0 wt%.

4. The method according to claim 3, characterized in that, in step 3, the mass fraction of the noble metal in the prepared hydrogenation catalyst is preferably 0.2 to 0.6 wt%.

5. The method according to claim 1, characterized in that, in step 3, the concentration of the noble metal component in the prepared catalyst particle increases gradually from the center of the particle to the outer surface thereof, the ratio of the metal content at the circumcenter of the particle to the metal content on the circumcircle surface of the particle is 0.1 to 0.6, and the ratio of the metal content at 0.5 R to the metal content on the outer surface is 0.4 to 0.8, where the circumradius is R with the circumcenter of the cross section of the catalyst particle taken as the starting point.

6. The method according to claim 1, characterized in that, in step 3, the step of gradually increasing the concentration of the noble metal impregnation solution is dropping a noble metal impregnation solution having a concentration higher than that of the noble metal impregnation solution at a low concentration into the noble metal impregnation solution at a low concentration at a constant speed during the impregnation process.

7. A noble metal hydrogenation catalyst prepared by the method for preparing a noble metal hydrogenation catalyst according to claim 1, characterized in that the concentration of the noble metal component in the noble metal hydrogenation catalyst increases gradually from the center of the particle to the outer surface thereof, the ratio of the metal content at the circumcenter of the particle to the metal content on the circumcircle surface of the particle is 0.1 to 0.6, and the ratio of the metal content at 0.5 R to the metal content on the outer surface is 0.4 to 0.8, where the circumradius is R with the circumcenter of the cross section of the catalyst particle taken as the starting point.

8. The noble metal hydrogenation catalyst according to claim 7, characterized in that the noble metal is selected from one or two of Pt, Pd, Ru, and Re compounds, and the mass fraction of the noble metal contained in the catalyst is preferably 0.05 to 2.0 wt%.

9. The noble metal hydrogenation catalyst according to claim 8, characterized in that the mass fraction of the noble metal contained in the catalyst is 0.1 to 1.0 wt%.

10. The noble metal hydrogenation catalyst according to claim 9, characterized in that the mass fraction of the noble metal contained in the catalyst is 0.2 to 0.6 wt%.

11. A method for preparing lubricant base oil by using the noble metal hydrogenation catalyst prepared by the method according to any one of claims 1 to 6 as a catalyst.

12. The method for preparing lubricant base oil according to claim 11, characterized in that a waxy hydrocarbon raw material is contacted with the noble metal hydrogenation catalyst on a catalyst bed under a hydrogen atmosphere and the product flows outward to obtain a lubricant base oil having a low pour point, high viscosity index and high yield.

13. The method for preparing lubricant base oil according to claim 12, characterized in that the waxy hydrocarbon raw material is selected from hydrocracked tail oil having a boiling point higher than 350°C, or hydrogenated vacuum gas oil, or slack wax, or ointment.

14. The method for preparing lubricant base oil according to claim 13, characterized in that the waxy hydrocarbon raw material has a sulfur content of no more than 100 μg/g and a nitrogen content of no more than 100 μg/g.

15. The method for preparing lubricant base oil according to claim 14, characterized in that the waxy hydrocarbon raw material has a sulfur content of no more than 50 μg/g and a nitrogen content of no more than 50 μg/g.