

WHAT IS CLAIMED IS:

1. A process for separating a fine catalyst component from a catalyst-containing slurry by separating the catalyst component from the mother liquor of the catalyst-containing slurry, the process comprising:

(a) providing a stacked disc centrifuge equipped with an auto-discharging functionality;

(b) providing a catalyst-containing slurry comprising a mixture of: (i) at least one catalyst compound; and (ii) at least one liquid component;

(c) feeding the catalyst-containing slurry to the stacked disc centrifuge of step (a);

(d) centrifuging, for a predetermined period of time, the catalyst-containing slurry to form a cake material of catalyst solids in the centrifuge and a centrate; wherein the centrate is removed substantially continuously from the centrifuge during this centrifuging step (d); and

(e) removing the cake material from the centrifuge after the centrifugation of step (d).

2. The process of claim 1, further including:

(f) washing the cake material of step (e) with a wash solution substantially simultaneously during the step (e) of removing the cake material from the centrifuge to remove any undesired components from the cake material.

3. The process of claim 1, wherein the at least one liquid component is water.

4. The process of claim 1, wherein the at least one catalyst compound is double metal cyanide.

5. The process of claim 2, wherein the washing step of step (f) is carried out using water, butanol, polyether polyol or mixtures thereof as the wash solution.

6. The process of claim 1, wherein the catalyst solids content in the cake material is from 10 weight percent to 40 weight percent.

7. The process of claim 1, wherein the feeding rate of the catalyst-containing slurry to the centrifuge is from 0.001 liters per hour to 300 liters per hour.

8. The process of claim 1, including further operating the centrifuge at a centrifugal force of from 6,000 G-force to 14,000 G-force.

9. The process of claim 1, including further discharging isolated solids from the centrifuge at predetermined intervals in a time period of from 5 minutes to 60 minutes.

10. The process of claim 1, wherein the resultant centrate produced from the centrifugation is visibly clear with a total suspended solids loss of from 0.005 weight percent to 0.2 weight percent.

11. The process of claim 1, further including:

(g) injecting a washing liquid into the centrifuge after the centrifugation step (d) and prior to removing step (e).

12. A catalyst product produced by the process of claim 1.