

wherein the difference between the temperature in said first location of said catalytically active material and the temperature in said second location of said catalytically active material is below said specified threshold value during an initial time of operation, and
5 wherein upon said indication being provided, the replacement of said catalytically active material is scheduled;

where the specified threshold is either defined as an absolute difference in temperature or defined as a relative value, compared to a difference in temperature the difference in temperature from the inlet of said catalytically active material to the outlet of said catalytically active material;
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15 wherein the feedstock comprises one or more oxygenates selected from the group consisting of triglycerides, fatty acids, resin acids, ketones, aldehydes and alcohols.

20 **Description**

More specifically, the present invention relates to a process for monitoring the operation of hydrodeoxygenation of a feedstock, comprising the steps of

- 25 - directing the feedstock to contact a material catalytically active in hydrotreatment,
- monitoring the temperature in multiple locations of said catalytically active material, and

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- providing an indication in a means for process monitoring
when the difference between the temperature in a first lo-
cation of said catalytically active material and the tem-
perature in a second location of said catalytically active
5 material is above a specified threshold value, optionally
for a specified time of operation,

wherein the difference between the temperature in said

Claims:

1. A process for monitoring the operation of
5 hydrodeoxygenation of a feedstock, comprising the steps of
- directing the feedstock to contact a material catalytically active in hydrotreatment,
 - 10 - monitoring the temperature in multiple locations of said catalytically active material, and
 - providing an indication in a means for process monitoring when the difference between the temperature in a first
15 location of said catalytically active material and the temperature in a second location of said catalytically active material is above a specified threshold value, optionally for a specified time of operation,
 - 20 wherein the difference between the temperature in said first location of said catalytically active material and the temperature in said second location of said catalytically active material is below said specified threshold value during an initial time of operation, and
25 wherein upon said indication being provided, the replacement of said catalytically active material is scheduled;
- where the specified threshold is either defined as an
30 absolute difference in temperature or defined as a relative value, compared to a difference in temperature the difference in temperature from the inlet of said

catalytically active material to the outlet of said
catalytically active material;
wherein the feedstock comprises one or more oxygenates
selected from the group consisting of triglycerides, fatty
5 acids, resin acids, ketones, aldehydes and alcohols.

2. Process according to claim 1, wherein the means for
process monitoring is a control room screen or submission
of a message via local or remote means of communication.

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3. Process according to claim 1 or 2, wherein the
submission of a message is email, SMS or web-page.

4. Process according to claim 1 or 2, wherein the
15 threshold value is an absolute difference in temperature of
10°C, 20°C or 40°C.

5. Process according to claim 1 or 2, wherein the
threshold is a relative threshold of 10%, 20% or 40% of the
20 difference in temperature from the inlet of said
catalytically active material to the outlet of said
catalytically active material.

6. Process according to claim 1 or 2, wherein the
25 difference in temperature from the inlet of said
catalytically active material to the outlet of said
catalytically active material is from 40°C to 200°C.

7. Process according to claim 1 or 2, wherein said
30 oxygenates originating from one or more of a biological
source, a gasification process, a pyrolysis process,
Fischer-Tropsch synthesis, or a further synthesis process.

8. Process according to claim 1 or 2, wherein the feedstock originates from plants, animals, vegetable oil refining, domestic waste or industrial organic waste.
- 5 9. Process according to claim 1 or 2, wherein the material which is catalytically active in hydrotreatment consists of one or more catalyst layers designed for fixed-bed hydrodeoxygenation purposes.
- 10 10. Process according to claim 1 or 2, wherein part of the outlet from the HDO reactor is recycled to the inlet of the HDO reactor and/or a diluent, that does not contain oxygen, is added to the inlet of the HDO reactor.
- 15 11. Process according to claim 1 or 2, wherein a mixture of a renewable feedstock and a fossil feedstock is co-processed.
- 20 12. Process according to claim 1 or 2, wherein the feedstock mixture contains up to 50% renewables.
13. Process according to claim 1 or 2 wherein the feedstock is renewable origin.
- 25 14. Process according to claim 1 or 2 wherein the feedstock originates from tall oil or black liquor.
- 30 15. Process according to claim 6, wherein the difference in temperature from the inlet of said catalytically active material to the outlet of said catalytically active material is from 80°C to 150°C.

16. Process according to claim 1 or 2, wherein the feedstock originates from algae or fish.

17. Process according to claim 12, wherein the feedstock
5 mixture contains up to 20% renewables.

18. Process according to claim 12, wherein the feedstock mixture contains up to 10 % renewables.