CLAIMS:

1. A process for producing aromatic compounds from a hydrocarbon feedstream, comprising:

passing the hydrocarbon feedstream to a hydrogenation/dehydrogenation reactor system, thereby generating a first stream; and

passing the first stream to a high temperature reforming reaction system thereby generating a reformate product stream, operated at an inlet temperature between 540°C and 580°C.

2. The process of claim 1 further comprising passing the reformate product stream to a reformate splitter, thereby generating a reformate overhead stream comprising C6 and C7 aromatics, and a bottoms stream.

3. The process of claim 2 further comprising passing the reformate overhead stream to an aromatics recovery unit thereby generating an aromatics product stream comprising benzene and toluene, and a raffinate stream.

4. The process of claim 3 further comprising passing the raffinate stream to the hydrogenation/dehydrogenation unit.

5. The process of any of claims 1 to 4 wherein the hydrogenation/dehydrogenation reactor system uses a catalyst that performs two functions, one to hydrogenate olefins and one to dehydrogenate naphthenes.

6. The process of any of claims 1 to 5 wherein the hydrogenation/dehydrogenation reactor system uses a metal only catalyst.

7. The process of any of claims 1 to 6 wherein the high temperature reforming reactor system comprises a plurality of reactors with inter-reactor heaters.

8. The process of any of claims 1 to 7 wherein the high temperature reforming reactor system is operated at a temperature between 540°C and 580°C.

9. The process of any of claims 1 to 8 wherein the hydrogenation/dehydrogenation reactor system is operated at a temperature between 420°C and 460°C.

10. The process of any of claims 1 to 9 further comprising:

passing a regenerated hydrogenation/dehydrogenation catalyst stream to the hydrogenation/dehydrogenation reactor system, thereby generating a hydrogenation/dehydrogenation catalyst effluent stream; and

passing a regenerated reforming stream to the high temperature reforming reactor, thereby generating a reforming catalyst effluent stream.

CLAIMS

1. A process for producing aromatic compounds from a hydrocarbon feedstream, comprising:

passing the hydrocarbon feedstream to a hydrogenation/dehydrogenation reactor system, thereby generating a first stream, wherein the hydrogenation/dehydrogenation reactor system is operated at a temperature between 420°C and 460°C; and

passing the first stream to a high temperature reforming reaction system thereby generating a reformate product stream, operated at an inlet temperature between 540°C and 580°C.

2. The process of claim 1 further comprising passing the reformate product stream to a reformate splitter, thereby generating a reformate overhead stream comprising C6 and C7 aromatics, and a bottoms stream.

3. The process of claim 2 further comprising passing the reformate overhead stream to an aromatics recovery unit thereby generating an aromatics product stream comprising benzene and toluene, and a raffinate stream.

4. The process of claim 3 further comprising passing the raffinate stream to the hydrogenation/dehydrogenation unit.

5. The process of any of claims 1 to 4 wherein the hydrogenation/dehydrogenation reactor system uses a catalyst that performs two functions, one to hydrogenate olefins and one to dehydrogenate naphthenes.

6. The process of any of claims 1 to 5 wherein the hydrogenation/dehydrogenation reactor system uses a metal only catalyst.

7. The process of any of claims 1 to 6 wherein the high temperature reforming reactor system comprises a plurality of reactors with inter-reactor heaters.

8. The process of any of claims 1 to 7 further comprising:

passing a regenerated hydrogenation/dehydrogenation catalyst stream to the hydrogenation/dehydrogenation reactor system, thereby generating a hydrogenation/dehydrogenation catalyst effluent stream; and

passing a regenerated reforming stream to the high temperature reforming reactor, thereby generating a reforming catalyst effluent stream.