associated with the upstream-most oligomerization reaction zone and where a single catalyst inhibitor feed location is positioned downstream of the downstream-most oligomerization reaction zone.

22. The system of any one of claims 15-21 where the set of internal baffles are present only in the oligomerization reaction zone.

23. The system of any one of claims 15-21 where the set of internal baffles are a first set of internal baffles in a first oligomerization reaction zone having a first spacing distance and a second set of internal baffles in a second oligomerization reaction zone having a second spacing distance.

24. The system of any one of claims 15-23 where the external motion driver is operable to transfer an oscillating motion into the process fluid.

25. The system of any one of claims 15-24 where the external motion driver is operable to transfer a reciprocating motion into the process fluid.

26. The system of any one of claims 15-25 where the external motion driver is operable to transfer a variable motion into the process fluid.

27. An ethylene oligomerization process for creating a refined 1-butene product from ethylene using an ethylene oligomerization system, the ethylene oligomerization process comprising the steps of:

introducing a reaction solution into a process fluid contained in an internal fluid conduit of an internal baffle single pass reactor at a proximal end of the reactor such that the process fluid traverses an operative length of the reactor by flowing along a process fluid flow pathway;

introducing a pre-activated oligomerization catalyst into the process fluid such that the pre-activated oligomerization catalyst is distributed in the process fluid;

introducing a catalyst inhibitor into the process fluid proximate to a catalyst deactivation zone such that the catalyst inhibitor is distributed in the process fluid; and

operating the ethylene oligomerization system ~~such that~~

an oligomerization catalyst ~~forms~~ in the process fluid from the reaction of the oligomerization pre-catalyst and the co-catalyst in the oligomerization reaction zone,

1-butene ~~forms~~ in the process fluid from the oligomerization reaction of ethylene in the presence of the oligomerization catalyst in the oligomerization reaction zone,

a deactivated oligomerization catalyst ~~forms~~ in the process fluid from the reaction of the oligomerization catalyst and the catalyst inhibitor in the catalyst deactivation zone,

~~an external motion driver induces~~ unsteadiness in the flow of the process fluid by introducing an oscillatory motion into the process fluid,

a crude product ~~passes~~ into a separation system, the crude product comprising 1-butene, ethylene and the deactivated oligomerization catalyst, and

~~the separation system selectively separates separately~~ the deactivated oligomerization catalyst, the ethylene and the 1-butene from the crude product such that a refined 1-butene product is produced;

where the ethylene oligomerization system comprises the internal baffle single pass reactor, the separation system and the exterior motion driver, where the internal baffle single pass reactor has an oligomerization reaction zone and a catalyst deactivation zone and where the catalyst deactivation zone is positioned downstream of the oligomerization reaction zone.

associated with the upstream-most oligomerization reaction zone and where a single catalyst inhibitor feed location is positioned downstream of the downstream-most oligomerization reaction zone.

22. The system of any one of claims 15-21 where the set of internal baffles are present only in the oligomerization reaction zone.

23. The system of any one of claims 15-21 where the set of internal baffles are a first set of internal baffles in a first oligomerization reaction zone having a first spacing distance and a second set of internal baffles in a second oligomerization reaction zone having a second spacing distance.

24. The system of any one of claims 15-23 where the external motion driver is operable to transfer an oscillating motion into the process fluid.

25. The system of any one of claims 15-24 where the external motion driver is operable to transfer a reciprocating motion into the process fluid.

26. The system of any one of claims 15-25 where the external motion driver is operable to transfer a variable motion into the process fluid.

27. An ethylene oligomerization process for creating a refined 1-butene product from ethylene using an ethylene oligomerization system, the ethylene oligomerization process comprising the steps of:

introducing a reaction solution into a process fluid contained in an internal fluid conduit of an internal baffle single pass reactor at a proximal end of the reactor such that the process fluid traverses an operative length of the reactor by flowing along a process fluid flow pathway;

introducing a pre-activated oligomerization catalyst into the process fluid such that the pre-activated oligomerization catalyst is distributed in the process fluid;

introducing a catalyst inhibitor into the process fluid proximate to a catalyst deactivation zone such that the catalyst inhibitor is distributed in the process fluid; and

operating the ethylene oligomerization system;

forming an oligomerization catalyst in the process fluid from the reaction of the oligomerization pre-catalyst and the co-catalyst in the oligomerization reaction zone,

forming 1-butene in the process fluid from the oligomerization reaction of ethylene in the presence of the oligomerization catalyst in the oligomerization reaction zone,

forming a deactivated oligomerization catalyst in the process fluid from the reaction of the oligomerization catalyst and the catalyst inhibitor in the catalyst deactivation zone,

inducing unsteadiness in the flow of the process fluid by introducing an oscillatory motion into the process fluid with an external driver,

passing a crude product into a separation system, the crude product comprising 1-butene, ethylene and the deactivated oligomerization catalyst, and

selectively separating the deactivated oligomerization catalyst, the ethylene and the 1-butene from the crude product with the separation system such that a refined 1-butene product is produced;

where the ethylene oligomerization system comprises the internal baffle single pass reactor, the separation system and the exterior motion driver, where the internal baffle single pass reactor has an oligomerization reaction zone and a catalyst deactivation zone and where the catalyst deactivation zone is positioned downstream of the oligomerization reaction zone.