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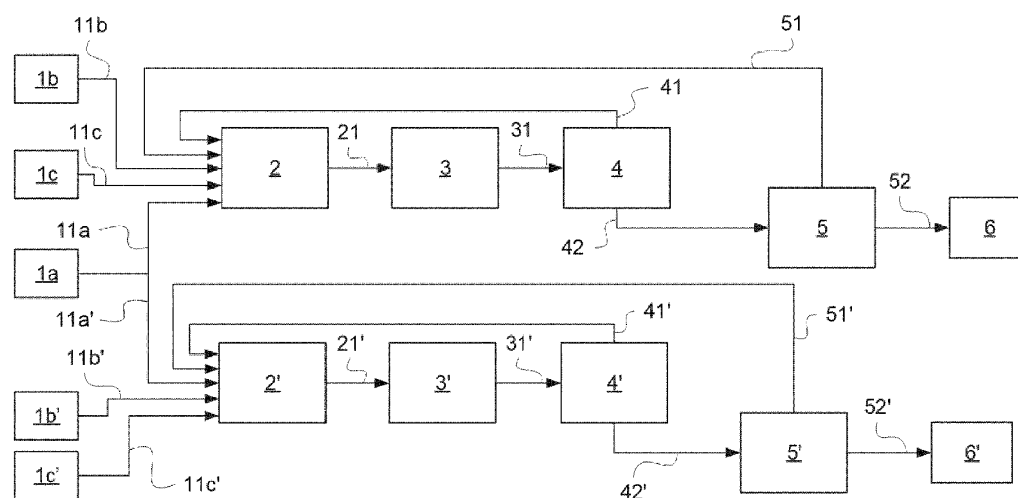


Fig. 1a

(57) Abstract: The disclosure relates to a polymerization process, comprising – providing a first hydrocarbon stream comprising first olefin monomer, first comonomer and solvent in a first providing step, wherein solvent is obtained from a solvent source; – combining the first hydrocarbon stream with hydrocarbons recycled from at least one downstream process step to a first combined hydrocarbon stream in a first combining step; – polymerizing the first olefin monomer and the first comonomer in the presence of a first polymerization catalyst in a first polymerization step in the solvent to produce a first solution comprising a first polymer of the first olefin monomer and the first comonomer; – withdrawing a first exhaust stream of the first solution in a first withdrawing step; – separating the first exhaust stream to a first primary hydrocarbon stream and a first concentrated solution stream in a first primary separation step; – recycling the first primary hydrocarbon stream to the first combining step in a first primary recycling step; – separating the first concentrated solution stream to a first secondary hydrocarbon stream and a first polymer product stream in a first secondary

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separation step; – recycling the first secondary hydrocarbon stream to the first combining step in a first secondary recycling step; – providing a second hydrocarbon stream comprising second olefin monomer, second comonomer and solvent in a second providing step, wherein the solvent is obtained from the solvent source; – combining the second hydrocarbon stream with hydrocarbons recycled from at least one downstream process step to a second combined hydrocarbon stream in a second combining step; – polymerizing the second olefin monomer and the second comonomer in the presence of a second polymerization catalyst in a second polymerization step in the solvent to produce a second solution comprising a second polymer of the second olefin monomer and the second comonomer; – withdrawing a second exhaust stream of the second solution in a second withdrawing step; – separating the second exhaust stream to a second primary hydrocarbon stream and a second concentrated solution stream in a second primary separation step; – recycling the second primary hydrocarbon stream to the second combining step in a second primary recycling step; – separating the second concentrated solution stream to a second secondary hydrocarbon stream and a second polymer product stream in a second secondary separation step; and – recycling the second secondary hydrocarbon stream to second combining step in a second secondary recycling step wherein – the first providing step and the second providing step are performed in parallel; – the first combining step and the second combining step are performed in parallel; – the first polymerization step and the second polymerization step are performed in parallel; – the first withdrawing step and the second withdrawing step are performed in parallel; – the first primary separation step and the second primary separation step are performed in parallel; – the first primary recycling step and the second primary recycling step are performed in parallel; – the first secondary separation step and the second secondary separation step are performed in parallel; and – the first secondary recycling step and the second secondary recycling step are performed in parallel. The disclosure relates also to a polymerization arrangement, comprising – a solvent source arranged to provide solvent for a first hydrocarbon stream and a second hydrocarbon stream, the first hydrocarbon stream comprising first olefin monomer, first comonomer and solvent, and the second hydrocarbon stream comprising second olefin monomer, second comonomer and solvent; – a first olefin monomer source arranged to provide first olefin monomer for the first hydrocarbon stream; – a first comonomer source arranged to provide first comonomer for the first hydrocarbon stream; – a first combining means in fluid connection with the solvent source, the first olefin monomer source and the first comonomer source, wherein the first combining means is arranged to combine the first hydrocarbon stream with a stream of recycled hydrocarbons to a first combined hydrocarbon stream; – a first polymerization reactor train in fluid connection with the combining means and arranged to polymerize olefin monomer and comonomer in the presence of a polymerization catalyst in solvent to produce a first solution comprising a first polymer of the olefin monomer and the comonomer; – a first primary separation device in fluid connection with the first polymerization reactor train and arranged to separate a first exhaust stream of the first solution withdrawn from the first polymerization reactor train to a first primary hydrocarbon stream and a first concentrated solution stream; – a first primary recycling means in fluid connection with the first primary separation device and the first combining means for recycling the first primary hydrocarbon stream to the first combining means; – a first secondary separation device in fluid connection with the first primary separation device, wherein the first secondary separation device is arranged to separate the first concentrated solution stream to a first secondary hydrocarbon stream and a first polymer product stream; – a first secondary recycling means in fluid connection with the first secondary separation device and the first combining means for recycling the first secondary hydrocarbon stream to the first combining means; – a second combining means in fluid connection with the solvent source and arranged to combine the second hydrocarbon stream with a stream of recycled hydrocarbons to a second combined hydrocarbon stream; – a second polymerization reactor train in fluid connection with the combining means and arranged to polymerize olefin monomer and comonomer in the presence of a polymerization catalyst in solvent to produce a second solution comprising a second polymer of the olefin monomer and the comonomer; – a second primary separation device in fluid connection with the second polymerization reactor train and arranged to separate a second exhaust stream of the second solution withdrawn from the second polymerization reactor train to a second primary hydrocarbon stream and a second concentrated solution stream; – a second primary recycling means in fluid connection with the second primary separation device and the second combining means for recycling the second primary hydrocarbon stream to the second combining means; – a second secondary separation device in fluid connection with the second primary separation device, wherein the second secondary separation device is arranged to separate the second concentrated solution stream to a second secondary hydrocarbon stream and a second polymer product stream; and – a second secondary recycling means in fluid connection with the second secondary separation device and the second combining means for recycling the second secondary hydrocarbon stream to the second combining means wherein – the first polymerization reactor train and the second polymerization reactor train are arranged to operate in parallel; – the first primary separation device and the second separation device are arranged to operate in parallel; – the first primary recycling means and the second primary recycling means are arranged to operate in parallel; – the first secondary separation device and the second secondary separation device

are arranged to operate in parallel; and – the first secondary recycling means and the second secondary recycling means are arranged to operate in parallel.