Summary:

In an aspect, there is provided a process for the concomitant synthesis of poly(3,4-ethylenedioxythiophene) (PEDOT) and of electrolytic (co)polymer, comprising the following successive steps:

- preparation of a solution of water and of ionic monomer with stirring at a temperature of between 15 and 25°C in a reactor,
- introduction of a solution of 3,4-ethylenedioxythiophene (EDOT) predissolved in a solvent,
- stirring until dissolved,
- introduction of a solvent-nonionic monomer dispersion,
- stirring until the resulting dispersion has turned white,
- heating to a temperature of between 35 and 55°C,
- introduction of a solution of initiator and of the remaining EDOT,
- continuation of the stirring and heating in parallel with the continuous or semi-continuous introduction of the solution of the remaining EDOT and of initiator.

It is clearly understood that this process may comprise other preliminary or intermediate steps or steps subsequent to those above.

Detailed description:

The term "concomitant polymerization of a composite latex of poly(3,4-ethylenedioxythiophene) and of electrolytic (co)polymer" means a polymerization in which the monomers 3,4-ethylenedioxythiophene (EDOT) and the precursor monomers of the electrolytic (co)polymer are simultaneously polymerized using the same initiator.

Claims

1. A process for the concomitant synthesis of poly(3,4-ethylenedioxythiophene) (PEDOT) and of electrolytic (co)polymer, comprising the following successive steps:
- preparation of a solution of water and of ionic monomer with stirring at a temperature of between 15 and 25°C in a reactor,
- introduction of a solution of 3,4-ethylenedioxythiophene (EDOT) predissolved in a solvent,
- stirring until dissolved,
- introduction of a solvent-nonionic monomer dispersion,
- stirring until the resulting dispersion has turned white,
- heating to a temperature of between 35 and 55°C,
- introduction of a solution of initiator and of the remaining EDOT,
- continuation of the stirring and heating in parallel with the continuous or semi-continuous introduction of the solution of the remaining EDOT and of initiator.

2. The process as claimed in claim 1, in which the electrolytic (co)polymer consists of styrene and styrene sulfonate.

3. The process as claimed in claim 1, in which the electrolytic (co)polymer consists of a salt of acrylic acid and of at least one alkyl (meth)acrylate.

4. The process as claimed in claim 1, in which the initiator is water-soluble.

5. The process as claimed in claim 1, in which the initiator is a persulfate.

6. The process as claimed in claim 1, in which the initiator is ammonium persulfate.

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