CLAIMS

What is claimed is:

1. An adhesive comprising at least one of the following copolymer A:

the copolymer A has at least one repeating unit carrying an amide group and a carboxyl and/or its ammonium salt and at least one other repeating unit different from the one carrying an amide group and a carboxyl and/or its ammonium salt,

wherein the other repeating unit comprises polymerized monomers from gasoline, C_8 fraction, C_9 fraction or coal tar light fraction, and wherein the monomers contain carbon-carbon unsaturated double bond.

2. The adhesive according to claim 1, wherein in the copolymer A, the amount of the repeating units having an amide group and a carboxyl and/or its ammonium salt is 10-80% by weight, or 30-70% by weight, based on the total amount of repeating units of the copolymer A.

3. The adhesive according to claim 1 or 2, wherein the other repeating unit of the copolymer A comprises polymerized monomers from C_8 fraction, C_9 fraction or coal tar light fraction, and wherein the monomers contain carbon-carbon unsaturated double bond.

4. The adhesive according to any one of claims 1 to 3, wherein the other repeating unit of the copolymer A comprises polymerized monomers from C_8 fraction, or C_9 fraction, and wherein the monomers contain carbon-carbon unsaturated double bond.

5. The adhesive according to any one of claims 1 to 4, wherein the copolymer A further comprises an additional repeating unit derived from at least one monomer having at least two non-conjugated carbon-carbon unsaturated double bonds, preferably, the non-conjugated carbon-carbon unsaturated double bond in the monomer having at least two non-conjugated carbon-carbon unsaturated double bonds is selected from non-conjugated carbon-carbon double bonds in (meth)acrylate group, (meth)acrylamide group, vinyl, allyl, and alkene or cycloalkene.

6. The adhesive according to any one of claims 1 to 5, wherein the copolymer A is derived from a copolymer B, which has at least one repeating unit carrying an anhydride group.

7. The adhesive according to any one of claims 1 to 6, wherein the copolymer A is derived from a reaction of the copolymer B with ammonia.

8. The adhesive according to claim 6 or 7, wherein the anhydride group on the copolymer B is introduced into the copolymer B through polymerization of at least one monomer having a carbon-carbon unsaturated double bond and an anhydride group.

9. The adhesive according to claim 8, wherein the monomer having a carbon-carbon unsaturated double bond and an anhydride group is selected from monoethylenically unsaturated dicarboxylic anhydride having 4 to 8 carbon atoms, preferably maleic anhydride, itaconic anhydride, citraconic anhydride, and methylene malonic anhydride, more preferably maleic anhydride.

10. The adhesive according to any one of claims 6 to 9, wherein the copolymer B is a copolymer formed from at least one monomer having a carbon-carbon unsaturated double bond and an anhydride group and at least one other monomer having a carbon-carbon unsaturated double bond,

wherein the other monomer having a carbon-carbon unsaturated double bond is derived from reaction material selected from gasoline, C_8 fraction, C_9 fraction or coal tar light fraction.

11. The adhesive according to any one of claims 6 to 10, wherein the copolymer B further comprises an additional repeating unit derived from at least one monomer having at least two non-conjugated carbon-carbon unsaturated double bonds, preferably the non-conjugated carbon-carbon unsaturated double bond in the monomer having at least two non-conjugated carbon-carbon unsaturated double bonds is selected from non-conjugated carbon-carbon double bonds in (meth)acrylate group, (meth)acrylamide group, vinyl, allyl, and alkene or cycloalkene.

12. The adhesive according to any one of claims 1 to 11, wherein the adhesive is in solid form, preferably powder form; or in form of aqueous composition, preferably in form of aqueous solution, preferably a content of the copolymer A is 2-40% by weight, especially 5-30% by weight, based on the total weight of the aqueous composition.

13. The adhesive according to any one of claims 1 to 12, wherein the adhesive does not

comprise an organic crosslinking agent capable of covalently crosslinking with the amide group and/or carboxyl of the copolymer A.

14. An artificial board formed from a lignocellulose material and the adhesive according to any one of claims 1 to 13.

15. The artificial board according to claim 14, wherein the adhesive is used in an amount based on solid content of 1-45% by weight, preferably 2-35% by weight, more preferably 3-30% by weight based on the total weight of the artificial board.

16. The artificial board according to claim 14 or 15, wherein the copolymer A as defined in any one of claims 1 to 12 is used in an amount of 1-40% by weight, preferably 2-30% by weight, more preferably 3-25% by weight, based on the total weight of the artificial board.

17. The artificial board according to any one of claims 14 to 16, wherein the adhesive is used as a matrix resin, preferably the adhesive fills a gap between the lignocellulose materials.

18. The artificial board according to any one of claims 14 to 17, wherein the artificial board is particle board, plywood, density board, fiber board, straw board or finger joint board.

19. A method for a manufacturing artificial board, which comprises using the adhesive according to any one of claims 1 to 13.

20. The method according to claim 19, which comprises pressing a mixture of the lignocellulosic material and the adhesive at a temperature of 105 to 300°C and a pressure of 0.4 to 10 MPa, preferably for 2 to 60 minutes, more preferably for 3 to 30 minutes.

21. The method according to claim 19 or 20, wherein the artificial board is the artificial board according to any one of claims 14 to 18.

22. Use of the adhesive according to any one of claims 1 to 13 in manufacture of lignocellulose-based artificial board.