Claims:

1. A process for converting xylose to furfural comprising:

   (a) providing a first stream comprising 10 to 20 % by weight of xylose obtained from an acid pre-treated lignocellulosic biomass;

   (b) adjusting pH of said first stream with a metal oxide or hydroxide forming a second stream;

   (c) mixing said second stream with isophorone or a mixture of at least one low boiling solvent boiling below boiling point of furfural and at least one high boiling solvent boiling above boiling point of furfural forming a third stream;

   (d) treating said third stream in a reactor at a temperature from 160°C to 220°C and a pressure from 10 to 20 bar for a time period from 10 minutes to 120 minutes so as to cause a desired reaction forming a fourth stream;

   (e) separating said fourth stream into an organic stream and an aqueous stream;

   (f) adjusting pH of said organic stream by a base;

   (g) optionally separating, recycling and/or recovering the at least one low boiling solvent;

   (h) separating furfural as the product from a fraction comprising or consisting of humins and the at least one high boiling solvent or isophorone and

   (i) recycling and/or recovering the at least one high boiling solvent or isophorone.

2. The process of claim 1, wherein said:

   (i) first stream comprises xylose between 10% to 20% by weight;
   (ii) first stream is obtained from an acid pre-treated lignocellulosic material, after removal of insoluble fraction;
   (iii) low boiling solvent is MIBK or toluene;
   (iv) high boiling solvent is isophorone;
   (v) temperature ranges from 160°C to 220°C;
   (vi) specific time period ranges from 10 minutes to 120 minutes and/or pH of said first stream is adjusted to between 1 and 2.

3. The process of claim 1 or 2, wherein the pH of said organic stream is adjusted to 7.

4. The process of any of claims 1 to 3, wherein pH of said first stream is adjusted using sodium hydroxide or magnesium oxide.

5. The process of any of claims 1 to 4, wherein pH of said organic stream is adjusted using sodium hydroxide, monoethanolamine or sodium bicarbonate.

6. The process of any of claims 1 to 5, wherein said solvents separated from said organic stream are recycled.

7. The process of any of claims 1 to 6, wherein said high boiling solvent solubilises most of humins formed in said process.

8. The process of any of claims 1 to 7, wherein conversion efficiency of xylose is more than 90% by weight.

9. The process of any of claims 1 to 8, wherein yield of furfural is at least 60% by weight of xylose.

10. The process of any of claims 1 to 9, wherein said reactor is a batch type closed stirred tank reactor, a continuous stirred-tank reactor or a continuous plug-flow reactor, a continuous stirred-tank reactor or a continuous plug-flow reactor.