Claims:

1. A process for converting xylose to furfural comprising:

(a) providing a first stream comprising 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 and at least one high boiling solvent forming a third stream;

(d) treating said third stream in a reactor at a temperature and pressure for a specific time period 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 30% by weight;

(ii) first stream is obtained from an acid pre-treated lignocellulosic material, preferably after removal of insoluble fraction;

(iii) low boiling solvent is MIBK or toluene;

(iv) high boiling solvent is isophorone;

(v) temperature ranges from about 160°C to about 220°C;

(vi) specific time period ranges from 10 minutes to 120 minutes and/or

(vii) 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 reactor, a continuous stirred-tank reactor or a continuous plug-flow reactor, preferably a continuous stirred-tank reactor or a continuous plug-flow reactor.

11. The process of any of claims 1 to 10 in an industrial scale.