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KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,  
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,  
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LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,  
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
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(54) Title: A PROCESS FOR PREPARATION OF UNSATURATED KETONE

(57) Abstract: The present invention relates to a process for preparing unsaturated ketone by using an ion exchange polymer as a catalyst. The process comprises the steps of mixing an aldehyde with a ketone and passing the mixture of aldehyde and ketone through a fixed bed catalytic reactor comprising the ion exchange polymer at a temperature of atleast 60 degree C at atmospheric pressure for a retention period of 30-50 min. The unsaturated ketone obtained from the reaction is purified by distillation and 99.5 % pure unsaturated ketone with a yield of not less than 80% is obtained.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/IN14/00538

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - C07C 45/74, 49/203; B01J 31/10 (2016.01)

CPC - C07C 45/74, 49/203; B01J 31/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) Classification(s): C07C 45/66, 45/74, 49/203; B01J 31/10 (2016.01)

CPC Classification(s): C07C 45/66, 45/74, 49/203; B01J 31/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); Google Scholar; Google; EBSCO; process, 3-methyl-3-penten-2-one, acetaldehyde, butyraldehyde, acetone, methyl ethyl keone, butanone, sulfonated polystyrene resin

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3,077,500 A (HEINZ, WE et al.) 12 February 1963; column 1, lines 45-47; column 4, lines 59-60; column 6, lines 15-17; column 7, lines 54-55; column 10, lines 28-32, 37-38; column 11, lines 25-26; column 12, lines 67-73; column 14, lines 47-52; column 16, lines 55-64; column 17, lines 19-23, 49-50, 59-60; claims 1, 4, 7	1-16
Y	US 3,876,706 A (LEVANEVSKY, OE et al.) 8 April 1975; column 1, lines 18-24; column 2, lines 57-59	5-6, 13-16
Y	EP 1 088 811 B1 (SAUDI BASIC INDUSTRIES CORPORATION) 20 November 2002; claims 1, 7	1-16
A	US 4,005,147 A (FISCHER, R et al.) 25 January 1977; entire document	1-16

 Further documents are listed in the continuation of Box C. See patent family annex.

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