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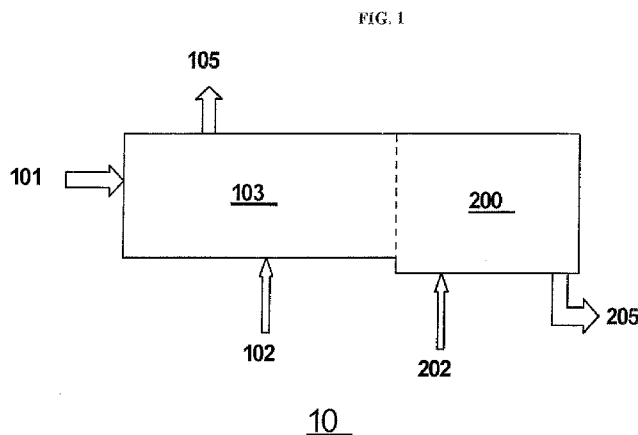
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[Continued on next page]

(54) Title: APPARATUS AND PROCESS FOR GASIFICATION OF CARBONACEOUS MATERIALS TO PRODUCE SYNGAS



(57) Abstract: A process and apparatus are provided for gasification of a carbonaceous material. The process produces a raw syngas that can be further processed in a tar destruction zone to provide a hot syngas. The process includes contacting said carbonaceous material with molecular oxygen-containing gas in a gasification zone to gasify a portion of said carbonaceous material and to produce a first gaseous product. A remaining portion of the carbonaceous material is contacted with molecular oxygen-containing gas in a burn-up zone to gasify additional portion of the carbonaceous material and to produce a second gaseous product and a solid ash. The first gaseous product and said second gaseous product are combined to produce a raw syngas that includes carbon monoxide (CO), carbon dioxide (CO2) and tar. The raw syngas is contacted with molecular oxygen containing gas in a tar destruction zone to produce said hot syngas.





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A. CLASSIFICATION OF SUBJECT MATTER INV. C10J3/86 C12P7/06 C01B3/00 C10J3/72 C10K3/00 ADD.				
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) C10J C12P C01B C10K				
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) EPO-Internal, WPI Data				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	US 2005/095183 A1 (REHMAT AMIRALE G [US] ET AL) 5 May 2005 (2005-05-05) paragraph [0031] - paragraph [0079]; figure 1 -----	1-37		
X	WO 2009/154788 A2 (INEOS USA LLC [US]) 23 December 2009 (2009-12-23) page 18, line 8 - page 22, line 9 -----	1-12, 15-37		
X	DE 10 2008 027858 A1 (HO JOERG [DE]; WIEST WOLFGANG [DE]) 17 December 2009 (2009-12-17) paragraph [0047] - paragraph [0065]; figure 1 ----- -/--	33-37		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.				
* Special categories of cited documents : <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;"> "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed </td> <td style="width: 50%; border: none; vertical-align: top;"> "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family </td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family			
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