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54 **Liquefaction of carbonous material with vapour phase hydrogen donor solvents.**

57 Disclosed is a method for enhancing the conversion of carbonous materials, such as coal and oil shale. The method comprises converting the carbonous material in the presence of a vapor phase hydrogen donor material containing one or more hydrogen donor solvents wherein each donor material is characterized by: (a) a heterocyclic ring in which the heteroatom is nitrogen, (b) having at least one donatable hydrogen located on the heterocyclic ring, and (c) becoming more unsaturated and/or aromatic upon the loss of the donatable hydrogen(s). The conversion is performed at substantially atmospheric pressure, at an effective vapor residence time and at a temperature from about the boiling point of the hydrogen donor material to about 550°C.



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EUROPEAN SEARCH REPORT

0045178

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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	<u>GB - A - 1 564 829 (EXXON)</u> * page 2, lines 82 to 89; claims 1,12,16 *	1,2,3,4	C 10 G 1/04
A	<u>FR - A - 2 295 114 (COAL INDUSTRY (PATENTS) LTD)</u> * page 3, lines 26-29; page 6, lines 18-19; claims 1,2,4,7 *	1,2,5	
P,A	<u>US - A - 4 250 014 (LONG et al.)</u> * page 2, lines 59 to 67; claims 1,3,8 *	1,2,4	TECHNICAL FIELDS SEARCHED (Int.Cl. ³)
			C 10 G
			CATEGORY OF CITED DOCUMENTS
			X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons
			&: member of the same patent family, corresponding document
☒ The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		01-03-1982	DE HERDT