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Sorting particles.

A process for separating one type of particle (e.g., ore particles) from a second type of particle (e.g., gangue particles) comprising the steps of (1) conditioning the particles to selectively mark one type of particle (i.e. either the ore particles or the gangue particles), to the substantial exclusion of the other; (2) detecting the marked particles; and (3) separating the detected marked particles from the substantially unmarked particles is characterised by the use, as a conditioning agent, of a compound having both a surface-selective functional group and a detectable moiety. In one embodiment, the detectable moiety is fluorescent and detecting is performed under ultraviolet radiation. The process is especially useful for separating higher grade limestone from lower grade limestone and/or gangue or for separating oil shale or coal of high heat value from lower heat content materials or for concentrating valuable minerals, such as silver or copper ores.

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EUROPEAN SEARCH REPORT

Application number

EP 80 30 4174

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
A,D	US-A-3 356 211 (T.C.MATHEWS) *Column 1, line 44 - column 2, line 32; column 3, line 18 - column 5, line 25; column 5, lines 68-72; column 6, lines 12-20*	1-3, 9-11, 16-22, 25	B 03 B 1/04 B 07 C 5/342 B 07 C 5/344 B 07 C 5/346 B 03 B 13/02
A,D	WO-A-7 900 950 (OCCIDENTAL RESEARCH CORPORATION) *Page 2, line 20 - page 6, line 17; page 9, line 24 - page 13, line 26*	1-3, 9-10, 16-22, 25	
A	WO-A-7 900 952 (OCCIDENTAL RESEARCH CORPORATION) *Page 2, line 18 - page 3, line 21; page 7, line 12 - page 9, line 27; page 10, lines 21-32; page 17, lines 5-9*	1-3, 9-16-20, 23	TECHNICAL FIELDS SEARCHED (Int. Cl. 3) B 03 B B 07 C
A,D	US-A-3 346 111 (R.L.THOMPSON et al.)		
A,D	US-A-3 901 793 (P.C.BUCHOT et al.)		
A,D	US-A-4 169 045 (B.M.MOUDGIL et al.)		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 05-04-1983	Examiner LAVAL J.C.A
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			