

## Search Report

Application No. 10201701302Y
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Application filing date 17/02/2017	(Earliest) Priority Date	Examiner's Reference Number IPOS/JT
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This Search Report issued under Section 29(5) of the *Patents Act* with effect from 14/02/2014 consists of a total of 4 pages.

☒ It is also accompanied by a copy of each prior art document cited in this report, except where otherwise indicated.

1. ☐ Certain claims where found unsearchable (*see Box I*)

2. ☐ Unity of invention is lacking (*see Box II*)

3. ☐ The application contains disclosure of a nucleotide and/or amino acid sequence listing and the search was carried out on the basis of the sequence listing.

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Office to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Office as appears in Box III.

6. The figure of the drawings to be published with the abstract is NONE,

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ because there are no drawings in the application.

☐ none of the figures.

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Box III Text of the abstract
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<p>The present invention relates to a polymer compound comprising a portion of polymer compounded with a portion of a cracking catalyst and to a plastic recycling process for recycling of a plastic product produced from the polymer compound according to the present invention wherein lighter hydrocarbon products can be obtained. An example of said polymer compound comprises a high density polyethylene (HDPE) compounded with acidic bentonite.</p>
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<b>A. CLASSIFICATION OF SUBJECT-MATTER</b> According to International Patent Classification (IPC) C08J11/10, C10G11/00, Y02W30/705, Y02W30/625, C08K3/00												
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) C08J, C10G, Y02W Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic database consulted during the search (name of database and, where applicable, search terms used) Databases: EPODOC, WPI, English Patent Full-text database and SCOPUS Keywords and synonyms: polymer, plastic, waste, polyethylene, polypropylene, poly vinyl chloride, polystyrene, polyethylene terephthalate, poly methyl methacrylate, cracking catalyst, zeolite, acidic clay, bentonite, compound, mixture, composite, blend, recovery and recycle.												
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>												
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim no.										
X	US 5079385 A (WU, M. M.) 7 January 1992 see column 3, lines 38-50, column 5, lines 1-6, column 6, lines 10-31, column 6, lines 56-59, and Examples I and II	1-14										
X	MAJKA, T. M. ET AL., Recycling of polypropylene/montmorillonite nanocomposites by pyrolysis. <i>Journal of Analytical and Applied Pyrolysis</i> , 22 April 2016, Vol. 119, pages 1-7 see abstract, page 3, left column, 2 <sup>nd</sup> paragraph and Table 1 Citation is not enclosed due to copyright restrictions.	1-14										
X	NEVES, I. C. ET AL., The effect of acidity behaviour of $\gamma$ zeolites on the catalytic degradation of polyethylene. <i>European Polymer Journal</i> , 15 March 2006, Vol. 42, pages 1541-1547 see abstract Citation is not enclosed due to copyright restrictions.	1-5										
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input type="checkbox"/> See supplemental box for details of the scope of the search.												
Special categories of cited documents:												
<table border="0"> <tr> <td>A: document defining the general state of the art which is not considered to be of particular relevance</td> <td>T: later document published after the filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>E: earlier application or patent but published on or after the filing date</td> <td>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</td> </tr> <tr> <td>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)</td> <td>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</td> </tr> <tr> <td>O: document referring to an oral disclosure, use, exhibition or other means</td> <td>&amp;: document member of the same patent family</td> </tr> <tr> <td>P: document published prior to the filing date but later than the priority date claimed</td> <td></td> </tr> </table>			A: document defining the general state of the art which is not considered to be of particular relevance	T: later document published after the filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	E: earlier application or patent but published on or after the filing date	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	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)	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	O: document referring to an oral disclosure, use, exhibition or other means	&: document member of the same patent family	P: document published prior to the filing date but later than the priority date claimed	
A: document defining the general state of the art which is not considered to be of particular relevance	T: later document published after the filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention											
E: earlier application or patent but published on or after the filing date	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											
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)	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											
O: document referring to an oral disclosure, use, exhibition or other means	&: document member of the same patent family											
P: document published prior to the filing date but later than the priority date claimed												
Date of submission of the request to the Intellectual Property Office of Singapore: 17/02/2017		Date of actual completion of the search: 17/03/2017										
Intellectual Property Office of Singapore 51 Bras Basah Road #01-01 Manulife Centre Singapore 189554 Email: operation@iposinternational.com		Authorized Officer Joan <u>Toh</u> (Dr)										

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C. (Continuation) DOCUMENT CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim no.
X	US 2009/0007484 A1 (SMITH, D. G.) 8 January 2009 see paragraphs [0051], [0077], [0141], [0144] and [0148-0149]	1-9
X	JP H09-268293 A (MITSUI PETROCHEM IND LTD) 14 October 1997 see paragraphs [0020-0021], [0040-0041] and [0050-0055] of the machine translation	1-9
A	US 2551580 A (BOND, JR. G. R. ET AL.) 8 May 1951 see whole document	