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(54) Title: ENHANCED THERMOSET RESINS CONTAINING PRE-TREATED NATURAL ORIGIN CELLULOSIC FILLERS

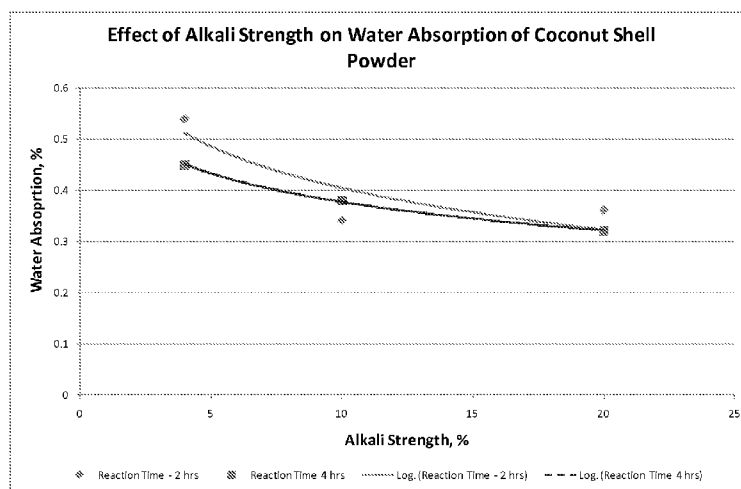


Fig. 1

(57) Abstract: A process of formulating a curable thermoset resin formulation is provided that includes reacting a natural cellulosic filler with at least one of: a silsesquioxane, a isocyanate, a base, or an organic acid to form a reduced hydrophilicity filler. By intermixing the resulting reduced hydrophilicity filler with a thermoset cross linkable polymeric resin, a curable thermoset resin formulation is formed that has superior properties to conventional formulations in terms of density and environmental impact. The formulation properties in terms of strength of the cured article are improved relative to untreated natural fillers. The treatment is advantageous relative to plasma treatment. An article is also provided produced upon cure of the formulation.



A. CLASSIFICATION OF SUBJECT MATTER***C08K 9/04(2006.01)i, C08K 7/02(2006.01)i, C08L 97/02(2006.01)i, C08L 101/00(2006.01)i, C08L 75/04(2006.01)i, C08J 5/00(2006.01)i***

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)

C08K 9/04; C08J 5/06

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords:natural fiber,resin,matrix,isocyanate,acid,base

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	IGOR MARIA DE ROSA et al. Effect of chemical treatments on the mechanical and thermal behaviour of okra fibres, November 2010 See pages 246,247,254	1-15
X	G.BOGOEVA-GACEVA et al. Natural fiber eco-composite, January 2007 See pages 100-105	1-6,9-15
X	JAYAMOL GEORGE et al.A review on interface modification and characterization of natural fiber reinforced plastic composites, April 2004 See pages 1471-1475	1-6,9-15
X	EP 1383824 B1 (CYCLETEC LTD) 29 October 2008 See pages 3-7	1-6,9-15

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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1383824 B1	29.10.2008	AU 2002-246282 A1 CA 2441381 A1 CN 1537131 A US 2002-0171162 A1 US 2003-0046772 A1 US 6863971 B2 WO 02-077077 A2	08.10.2002 03.10.2002 13.10.2004 21.11.2002 13.03.2003 08.03.2005 03.10.2002