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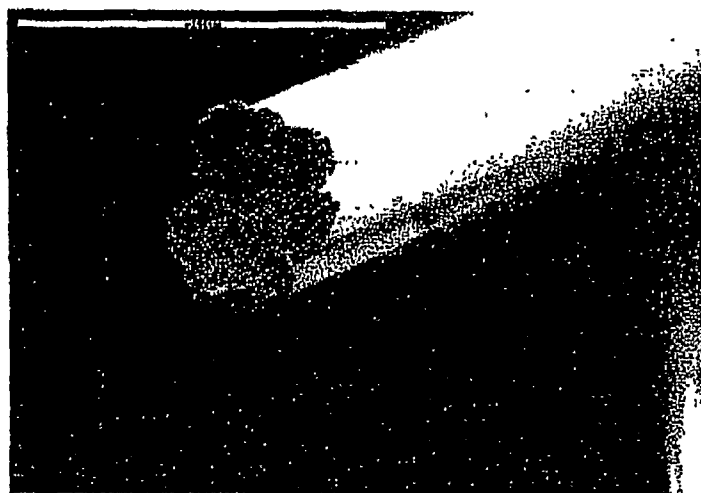
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(54) Title: HIGH MODULUS POLYAMIDE FIBERS



(57) Abstract: A process for preparing high initial modulus and high tensile strength polyamide fibers is described. The process comprises complexing the polyamide with a Lewis acid, dry jet wet spinning the complexed fibers, drying the spun fibers for a period of time, drawing the fibers, and soaking the fibers in solvent to remove the Lewis acid. High molecular weight nylon 6,6 fibers prepared according to the described process show initial modulus of up to 30.1 GPa and tenacities of up to 2.5 GPa.

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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - D01D 1/00 (2007.01), D01D 5/06 (2007.01), C08G 73/02 (2007.01) USPC - 528/310, 528/31 2, 28/172.2 According to International Patent Classification (IPC) or to both national classification and IPC			
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched International Classifications at WIPO & USPTO			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DialogPro Engineering, Conference, General Science & Materials Databases: PASCAL(144); Dissertation Abstracts(35); Ei Compendex (8); INSPEC(2); Current Contents(440); Google; Alta Vista; Taylor & Francis; Chemical Engineering & Biotech Abs(315); Inside Conferences(65); NTIS(6); JICST-E+(94); ACS; Wiley Inter Science; INIST-CNRS			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
X	JUNG, Dongwook, 'New methods for producing nylon 6,6 fibers with enhanced mechanical properties', Ph.D., North Carolina State University, December 2004, etd-12122004 Vol. 65/1 1-B. (12.12.2004), entire document, especially pg 15, para 1; pg 16, para 1; pg 19; pg 59, para 1; pg 60, para 2; pg 61-69; pg 75; Fig 13	1-32	
X	KOTEK, et al. Lewis Acid-Base Complexation of Polyamides and the Effect of Hydrogen bonding on Structure Development. National Textile Center Results III & IV, Project M01-S03, 1 October 2004.(01.10.2004), pg 4, para 1; pg 6, para 1; pg 6, para 2; pg 12, para 2; pg 13, para 3; pg 18, para 2-3; pg 19, para 1, 2, 4	1, 4-8, 16, & 25-31	
X	KOTEK, R. et al. National Textile Center Annual Report: NTC Project M01-NS03 November 2004, pg 1, para 2; pg 2, para 2-4, 6, 7; pg 3, para 3-5; pg 4, para 1-3; pg 6, table 1; pg 7-8	1-16, 18, 19, 23-31	
X	KOTEK, R. et al. Novel Methods for Obtaining High Modulus Aliphatic Polyamide Fibers Polymer Reviews July 2005, Vol. 45, Issue 3, pages 201 - 230 Previously published as: Journal of Macromolecular Science, Part C: Polymer Reviews (1532-1797, 1520-5746) pages 214 -215, & 216 fig. 13.	1-7, 9, 14, 15, 18, 19, 22, 25	
X	Tonelli, A. et al. NC State Textile Researchers Create Super-Strong Nylon Fibers NC State University News 23 September 2004 (23.09.2004), pg 1, para 1	1, 5, 6, 8, 24, 23, 24, 25, 26, 29	
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D			
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