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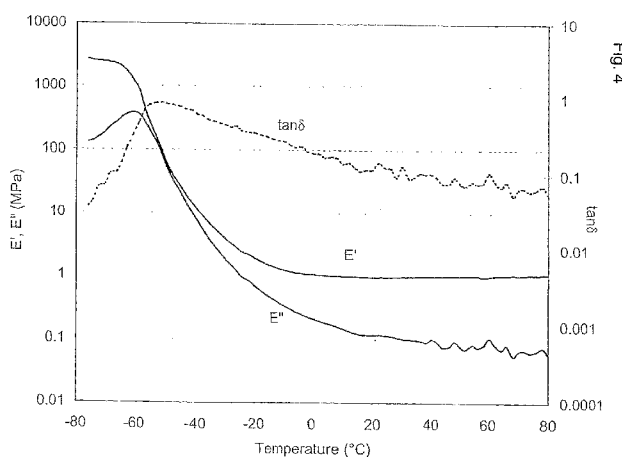
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(54) Title: REDUCED-DIAMETER OPTICAL FIBER



(57) **Abstract:** The present invention relates to a reduced-diameter optical fiber that employs a novel coating system. When combined with a bend-insensitive glass fiber, the novel coating system according to the present invention yields an optical fiber having exceptionally low losses. The coating system features (i) a softer primary coating with excellent low-temperature characteristics to protect against microbending in any environment and in the toughest physical situations and, optionally, (ii) a colored secondary coating possessing enhanced color strength and vividness. The secondary coating provides improved ribbon characteristics for structures that are robust, yet easily entered (i.e., separated and stripped). The optional dual coating is specifically balanced for superior heat stripping in fiber ribbons, with virtually no residue left behind on the glass. This facilitates fast splicing and terminations. The improved coating system provides optical fibers that offer significant advantages for deployment in most, if not all, fiber-to-the-premises (FTTx) systems.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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ADD.

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)
G02B C03C

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

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/013382 A1 (VAN EEKELEN JAN [NL] ET AL) 22 January 2004 (2004-01-22) paragraphs [0027], [0029]; table 2 -----	1-18
A	US 2004/022511 A1 (EEKELEN JAN VAN [NL] ET AL) 5 February 2004 (2004-02-05) paragraphs [0011], [0012] -----	1
A	WO 03/091178 A (DSM IP ASSETS BV [NL]; EEKELEN VAN JOHANNES ANDRIANUS [NL]; KLEIN NAGE) 6 November 2003 (2003-11-06) page 3 -----	1
A	US 7 272 289 B2 (BICKHAM SCOTT R [US] ET AL) 18 September 2007 (2007-09-18) column 12, lines 22-43 ----- -/-	1



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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 03/091177 A (PIRELLI [IT]; ROBA GIACOMO STEFANO [IT]; ARIMONDI MARCO [IT]; TERRUZZI) 6 November 2003 (2003-11-06) page 6, lines 15-21 -----	1
A	WO 02/055614 A (DSM NV [NL]; BISHOP TIMOTHY EDWARD [US]; LIN JIBING [US]; KRUMIN DAVID) 18 July 2002 (2002-07-18) page 9, lines 13-17 -----	1

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
US 2004013382 A1	22-01-2004	US 2006024010 A1	02-02-2006
US 2004022511 A1	05-02-2004	NONE	
WO 03091178 A	06-11-2003	AU 2003224510 A1	10-11-2003
		CN 1646444 A	27-07-2005
		CN 1951852 A	25-04-2007
		EP 1497239 A2	19-01-2005
		JP 2005524094 T	11-08-2005
US 7272289 B2	18-09-2007	CN 101313237 A	26-11-2008
		EP 1929345 A1	11-06-2008
		JP 2009510520 T	12-03-2009
		US 2007077016 A1	05-04-2007
		WO 2007040947 A1	12-04-2007
WO 03091177 A	06-11-2003	AT 378301 T	15-11-2007
		AU 2002316872 A1	10-11-2003
		BR 0210490 A	22-06-2004
		CA 2483308 A1	06-11-2003
		CN 1628082 A	15-06-2005
		DE 60223597 T2	13-11-2008
		EP 1497237 A1	19-01-2005
		ES 2296958 T3	01-05-2008
		NZ 535984 A	31-03-2009
		US 2006072889 A1	06-04-2006
WO 02055614 A	18-07-2002	AU 2002228455 A1	24-07-2002
		CN 1494577 A	05-05-2004
		EP 1358276 A2	05-11-2003
		JP 2004526006 T	26-08-2004
		JP 2009263672 A	12-11-2009
		KR 20090007502 A	16-01-2009