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(72) Inventors:  
• **Liao, Yen-Shuo**  
**Warsaw, IN 46580 (US)**  
• **DiSilvestro, Mark**  
**Fort Wayne, IN 46825 (US)**

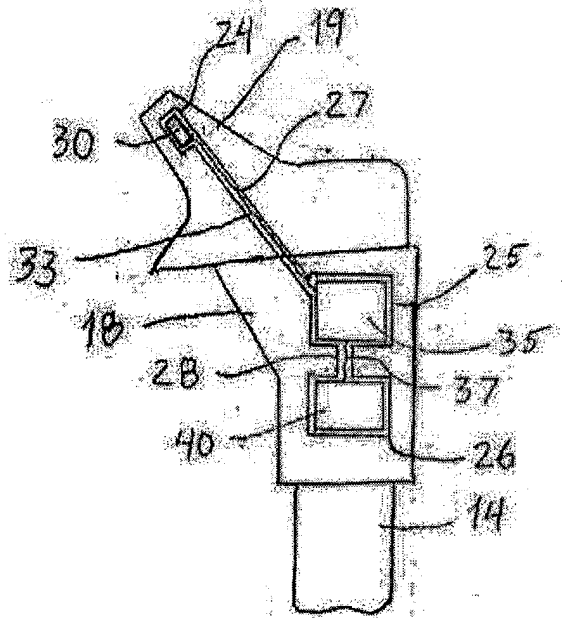
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(74) Representative: **Belcher, Simon James**  
**Urquhart-Dykes & Lord LLP**  
**Tower North Central**  
**Merrion Way**  
**Leeds LS2 8PA (GB)**

(71) Applicant: **DePuy Products, Inc.**  
**Warsaw, Indiana 46580 (US)**

(54) **Joint endoprosthesis with ambient condition sensing**

(57) A system for monitoring the ambient conditions of a mammalian joint, and particularly a joint that has been instrumented with a joint endoprosthesis (10) includes a sensor (30) supported by a component (14) of the joint endoprosthesis (10). The system includes a transmission element (35) that is also supported within the body of the patient, preferably within the endoprosthesis (10). The transmission element (35) transmits a signal indicative of the sensed ambient condition within the instrumented joint. For example, the sensor (30) can be a temperature sensor used to evaluate the temperature within a joint, such as a hip joint, during activity or exercise by the patient.



**FIG. 2**

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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 6 447 448 B1 (ISHIKAWA) 10 September 2002 (2002-09-10)	1-6,8-11	INV. A61F2/48
Y	* column 4, line 57 - column 10, line 13 * * column 14, lines 41-48 * * column 19, lines 24-27 * * column 26, lines 22-24 * * column 28, lines 4-13; claims 8-10; figures 1-6,8,9,13,14,20,25,26 * -----	7,12-14	A61F2/30 A61F2/32 A61F2/36 A61F2/38 A61B5/00 A61B5/07
Y	US 2003/176783 A1 (HU) 18 September 2003 (2003-09-18)	7,12-14	
A	* paragraphs [0016], [0018], [0049], [0050], [0055]; claim 15; figure 1 * -----	6	
A	US 2003/040806 A1 (MACDONALD) 27 February 2003 (2003-02-27) * paragraphs [0016] - [0029]; claims 1,3,10,13-15,19,20; figures 1-3 * -----	1,6, 8-10,12	
A	US 5 423 334 A (JORDAN) 13 June 1995 (1995-06-13) * column 25, line 21 - column 27, line 48; claim 3; figures 20-22 * -----	1,6,8, 12,14	TECHNICAL FIELDS SEARCHED (IPC)
A	US 2002/115944 A1 (MENDES) 22 August 2002 (2002-08-22) * abstract; figures 1,9 * -----	1,6,12	A61F A61B
A	US 2003/229398 A1 (IESAKA) 11 December 2003 (2003-12-11) * paragraph [0054]; figure 6 * -----	2-3	
A	US 5 935 171 A (SCHNEIDER) 10 August 1999 (1999-08-10) * column 2, lines 43-45; figures 1,5,6 * -----	6-7, 12-13	
1 The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 5 March 2010	Examiner Klein, Christophe
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	

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ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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05-03-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 6447448	B1	10-09-2002	AU 2400200 A WO 0038570 A1	31-07-2000 06-07-2000
US 2003176783	A1	18-09-2003	CA 2416139 A1 WO 0202028 A1 EP 1296608 A1 JP 2004507288 T	10-01-2002 10-01-2002 02-04-2003 11-03-2004
US 2003040806	A1	27-02-2003	AU 2002326669 A1 WO 03017821 A2	10-03-2003 06-03-2003
US 5423334	A	13-06-1995	CA 2114467 A1 EP 0619101 A1 JP 6296633 A	02-08-1994 12-10-1994 25-10-1994
US 2002115944	A1	22-08-2002	US 2002101232 A1	01-08-2002
US 2003229398	A1	11-12-2003	JP 3865138 B2 JP 2004024868 A WO 03103544 A1	10-01-2007 29-01-2004 18-12-2003
US 5935171	A	10-08-1999	NONE	

专利名称(译)	具有环境条件感测的关节内置假体		
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[标]申请(专利权)人(译)	德普伊产品公司		
申请(专利权)人(译)	DePuy公司PRODUCTS, INC.		
当前申请(专利权)人(译)	DePuy公司PRODUCTS, INC.		
[标]发明人	LIAO YEN SHUO DISILVESTRO MARK		
发明人	LIAO, YEN-SHUO DISILVESTRO, MARK		
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CPC分类号	A61B5/0008 A61B5/01 A61B5/076 A61B5/14539 A61B5/4528 A61B2017/00084 A61F2/0095 A61F2/32 A61F2/34 A61F2/36 A61F2/3662 A61F2/367 A61F2/38 A61F2/3804 A61F2/3859 A61F2/389 A61F2/40 A61F2/4657 A61F2002/30326 A61F2002/30449 A61F2002/30589 A61F2002/30593 A61F2002/30668 A61F2002/3067 A61F2002/30698 A61F2002/30878 A61F2002/30884 A61F2002/30892 A61F2002/3611 A61F2002/3625 A61F2002/3631 A61F2002/3647 A61F2002/365 A61F2002/4661 A61F2002/4672 A61F2002/4674 A61F2002/4696 A61F2002/48 A61F2002/481 A61F2002/482 A61F2002/488 A61F2220/005 A61F2250/0001 A61F2250/0002 A61F2250/0037 A61F2250/008 Y10S128/903		
优先权	10/813803 2004-03-31 US		
其他公开文献	EP1586287A2 EP1586287B1		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

用于监测哺乳动物关节的环境条件的系统，特别是已经装配有关节内置假体（10）的关节，包括由关节内置假体（10）的部件（14）支撑的传感器（30）。该系统包括传输元件（35），该传输元件也支撑在患者体内，优选地在内置假体（10）内。传输元件（35）在仪表化关节内传输指示所感测的环境条件的信号。例如，传感器（30）可以是温度传感器，用于在患者的活动或锻炼期间评估关节内的温度，例如髌关节。

