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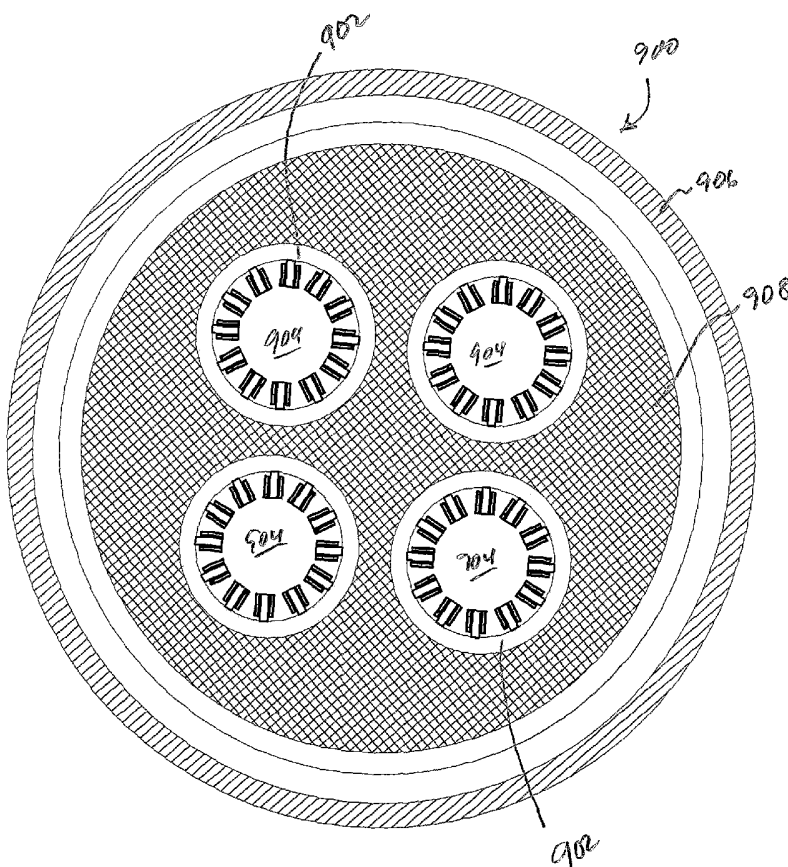
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- (71) Applicant (for all designated States except US): **THE UNIVERSITY OF HOUSTON SYSTEM** [US/US];  
The University of Houston, Assoc. Gen. Counsel, Off.  
IP Management, 316 E Cullen Building, Houston, Texas  
77204-2015 (US).
- (71) Applicant and
- (72) Inventor: **XIE, Leiming P.** [US/US]; 6310 Rampart  
Street, APT 30, Houston, Texas 77081 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WOSIK, Jaroslaw**  
[PL/US]; 2807 Conway, Houston, Texas 77025 (US).  
**NESTERUK, Krzysztof** [PL/PL]; Szegedynska 5 m.92,  
PL-01-957 Warsaw (PL).
- (74) Agent: **STROZIER, Robert, W.**; P.O. Box 429, Bellaire,  
Texas 77402 (US).
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(54) Title: SUPERCONDUCTING LOOP, SADDLE AND BIRDCAGE MRI COILS COMPRISING BUILT-IN CAPACITORS



(57) Abstract: New MRI coil and resonators are disclosed based solely on superconducting inductive element and built-in capacitive elements as well as hybrid superconducting-metal inductive and capacitive elements having superior SNR. Single and multiple small animal MRI imaging units are also disclosed including one or more resonators of this invention surrounding one or more small animal cavities. Methods for making and using the MRI coils and/or arrays are also disclosed.



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# INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01R33/34 G01R33/341 G01R33/3415

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)

IPC 7 G01R

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, WPI Data, PAJ, COMPENDEX, INSPEC, FSTA, BIOSIS, EMBASE, MEDLINE, IBM-TDB

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/067167 A1 (ROMO MARCO A ET AL) 6 June 2002 (2002-06-06)  paragraph '0001! paragraph '0004! - paragraph '0006! paragraph '0027! - paragraph '0032! figures 2-6	1-8, 11-18, 21-28, 31-38
X	US 5 585 723 A (WITHERS ET AL) 17 December 1996 (1996-12-17) column 1, lines 7-13 column 6, line 64 - column 7, line 34 figures 5,6  ----- -/--	1-3, 5-8, 21-23, 28

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Streif, J

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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.
X	WO 93/24848 A (CONDUCTUS, INC) 9 December 1993 (1993-12-09) page 1, lines 3-5 page 9, line 24 - page 10, line 16 figures 12,13	1-3,5-8
X	US 5 565 778 A (BREY ET AL) 15 October 1996 (1996-10-15) column 1, lines 27-31 column 5, line 23 - column 6, line 51 figures 2a,2c,3	1-3,5-7
X	EP 1 251 361 A (BRUKER BIOSPIN AG) 23 October 2002 (2002-10-23) paragraph '0001! paragraph '0032! - paragraph '0060! figures 4,10a-12,20,22	1-3,5,9, 10
X	WOSIK J ET AL: "A novel planar design of 200 MHz superconducting array" PROCEEDINGS OF THE INTERNATIONAL SOCIETY FOR MAGNETIC RESONANCE IN MEDICINE, 11TH SCIENTIFIC MEETING AND EXHIBITION, TORONTO, ONTARIO, CANADA, 10-16 JULY 2003, 10 July 2003 (2003-07-10), page 2373, XP002348446 the whole document	1-3,5-10
X	EP 0 895 092 A (BRUKER AG) 3 February 1999 (1999-02-03) paragraph '0001! paragraph '0018! paragraph '0029! paragraph '0032! - paragraph '0051! figures 1a-3,7,9a,9b	1-40
X	CHOW MS ET AL: "A two-channel HTS thin-film phased array coil for low field MRI" PROCEEDINGS OF THE INTERNATIONAL SOCIETY FOR MAGNETIC RESONANCE IN MEDICINE, 11TH SCIENTIFIC MEETING AND EXHIBITION, TORONTO, ONTARIO, CANADA, 10-16 JULY 2003, 10 July 2003 (2003-07-10), page 2372, XP002348447 the whole document	1-3,5-8, 41
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International Application No

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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	<p>MALAGOLI A ET AL: "Radiofrequency response of Ag-sheathed (Bi,Pb)<sub>2</sub>Sr<sub>2</sub>Ca<sub>2</sub>Cu<sub>3</sub>O<sub>10+x</sub> superconducting tapes"</p> <p>PHYSICA C, NORTH-HOLLAND PUBLISHING, AMSTERDAM, NL, vol. 378-381, October 2002 (2002-10), pages 1087-1090, XP004383056 ISSN: 0921-4534 the whole document</p> <p>-----</p>	1-41
A	<p>BOCK N A ET AL: "Multiple-mouse MRI" MAGNETIC RESONANCE IN MEDICINE, ACADEMIC PRESS, DULUTH, MN, US, vol. 49, no. 1, January 2003 (2003-01), pages 158-167, XP002281379 ISSN: 0740-3194 the whole document</p> <p>-----</p>	1-41
A	<p>WO 00/70356 A (INTERMAGNETICS GENERAL CORPORATION) 23 November 2000 (2000-11-23) the whole document</p> <p>-----</p>	1-41
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A	<p>FR 2 616 911 A (THOMSON CGR) 23 December 1988 (1988-12-23) the whole document</p> <p>-----</p>	1-41

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Information on patent family members

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