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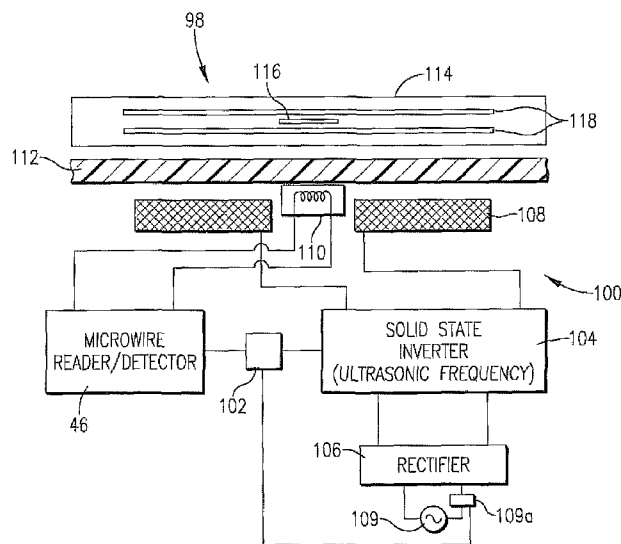
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12 September 2008

(54) **Title:** MAGNETIC ELEMENT TEMPERATURE SENSORS



(57) **Abstract:** Small, low-cost wireless temperature sensors (120) are provided for sensing the temperature of servingware (121). Each temperature sensor preferably includes a substrate (124); at least one sensor element (122) positioned on the substrate; and an adhesive (126) for securing the sensor element to the substrate and for securing the temperature sensor to the servingware so that the sensor element may sense a temperature of the servingware. The temperature sensors may be used in conjunction with a reader/detector (136) operable to generate a magnetic field of magnitude sufficient to cause re-magnetization responses of the temperature sensor element and optional data elements to detect such responses, and to use the detected responses to determine the temperature of the servingware by means of a decoding algorithm. The temperature sensors can be used in closed-loop heating systems capable of controlling the heating of the servingware.

WO 2007/134061 A3

## INTERNATIONAL SEARCH REPORT

International application No

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<b>A CLASSIFICATION OF SUBJECT MATTER</b> IPC GOIK 7/02( 2006 01)  USPC 374/161,100-106 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U S 374/161,100-106  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 practicable, search terms used) WEST		
<b>C DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
Y	US 5775810 A (Shin) 07 July 1998, entire doc	all
Y	US 6208253 A (FLETCHER et al ) 27 March 2001, entire doc	all
Y	US 3521257 A (Nelson) 21 July 1970, Fig 1	all
Y	US 6042264 A (Prusik et al ) 28 March 2000, entire doc	23-25,47
Y,P	US 20020097777 A1 (Ronchi) 25 July 2002, Fig 1	25, 54-55
Y,P	US 20050237197 AI (Liebermann et al ) 27 October 2005, entire doc	all
Y	JP04099935 A (Fuji ELECTRIC) 31 March 1992, entire doc	all
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input type="checkbox"/> See patent family annex		
* Special categories of cited documents "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
Date of the actual completion of the international search 12 May 2008 (12 05 2008)		Date of mailing of the international search report 03 JUN 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn ISA/US Commissioner for Patents P O Box 1450 Alexandria, Virginia 22313-1450 Facsimile No (571) 273-3201		Authorized officer Edward Lefkowitz Telephone No 571/ 272-2253

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PCT/US07/68483

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
Y	JP 633 13880 A (Asahi CHEM) 21 December 1988, entire doc	all
Y	JP 60069527 A (TDK CORP) 20 April 1985, entire doc	all
Y	JP 58155322 A (AISIN SEIKI) 16 September 1983, entire doc	all
Y	JP 03205576 A (HITACHI) 09 September 1991, entire doc	all

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US07/68483

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons

- 1 ☐ Claims Nos  
because they relate to subject matter not required to be searched by this Authority, namely
- 2 ☐ Claims Nos  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically
- 3 ☐ Claims Nos  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows  
Group I claims 1-55, 70-97, 102, 116, 119-130, group II claims 56-64, 117-118, group III claims 65-69, group IV claims 98-101

- 1 ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
- 2 ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees
- 3 ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos
- 4 ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims, it is covered by claims Nos 1-55, 70-97, 102-116 and 119-130

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation
- ☐ No protest accompanied the payment of additional search fees