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(71) Applicant (for all designated States except US): **NOBLE FIBER TECHNOLOGIES, LLC** [US/US]; 300 Palm Street, Scranton, PA 18505 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CHANDRA, Satish, N.** [US/US]; 202 Barrington Place, Lansdale, PA 19446 (US). **MCNALLY, William, F.** [US/US]; 210 Grandview Street, Clarks Summit, PA 18411 (US). **FUREY, Joel, M.** [US/US]; 300 North Hollow Road, Stowe, VT 05672 (US). **SOSNOWSKI, Anthony, Michael** [US/US]; 5093 Custard Road, Stroudsburg, PA 18360 (US).

(74) Agent: **TOMA, David**; Lowenstein Sandler P.C., 65 Livingston Avenue, Roseland, NJ 07068 (US).

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(54) Title: FLEXIBLE ELECTRICALLY CONDUCTIVE CIRCUITS

(57) Abstract: A flexible electrical circuit formed from a flexible fabric of a nonconductive material that forms a sheet and one or more conductive circuits attached to the fabric and formed at least partially from silver. The conductive circuits may be formed from at least one conductive fiber formed from a core coated with a coating at least partially formed from silver, wherein the core is formed at least partially from nylon. In at least one embodiment, the outer coating may have a silver content of more than 95 percent. The fiber may be patterned stitched, plied multiple times, or attached in other manners to change the resistance. In another embodiment, the conductive circuits may be formed from an etched silver layer attached to the flexible fabric. The conductive circuits may be used in many applications, such as, but not limited to forming heaters, sensors, antennas, stretchable fabrics, and in other applications.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/15178

A. CLASSIFICATION OF SUBJECT MATTER

IPC: H05B 3/34(2006.01),3/54(2006.01)

USPC: 219/528

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)

U.S. : 219/528, 505, 211, 212, 529, 545, 549; 174/128.1

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 3,751,620 A (YUASA) 07 August 1973(07.08.1973), see entire document.	1-2 and 16 ----- 3-9, 12-13 and 17-24
Y --- A	US 5,128,171 A (ALDISS) 07 July 1992(07.07.1992), see entire document.	3-5 and 18-20 ----- 10-11, 14-15 and 22-23
Y --- A	US 6,963,055 B2 (ROCK et al.) 08 November 2005(08.11.2005), see entire document.	6-9 and 21 ----- 10, 11, 14, 15 and 22, 23



Further documents are listed in the continuation of Box C.



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	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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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

Marianne Seidel

Telephone No. (571) 272.1600

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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.
Y --- A	US 2,854,386 A (LYMAN et al.) 30 September 1958(30.09.1958), see entire document.	12-13 and 24 ----- 10-11, 14, 15 and 22- 23
Y --- A	US 4,149,066 A (NIIBE) 10 April 1979(10.04.1979), see entire document.	17 ----- 10-11, 14-15 and 22- 23

INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

EAST: sensor and helical sensor and spiral and silver circuit and blanket and cloth and (blanket or cloth or strip) and fabric, flexible with silver