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(71) Applicant (for all designated States except US): ETE-

GENT TECHNOLOGIES LTD. [US/US]; 1775 Mentor Avenue, Suite 302, Cincinnati, OH 45212-3575 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LARSEN, Chris-

topher, George [US/US]; 6619 Aston Avenue, Cincinnati, OH 45213 (US). ROTH, Richard, Allan [US/US]; 2633 Lake Pine Drive, Goshen, OH 45122 (US). SHELLEY, Stuart, J. [US/US]; 3716 Center Street, Cincinnati, OH 45227 (US). HACKER, Aaron, Collins [US/US]; 4157

Paxton Woods Lane, Cincinnati, OH 45209 (US). HEHR, Adam, Jacob [US/US]; 4677 E. Terrace Circle, Port Clinton, OH 43452 (US).

(74) Agents: STINEBRUNER, Scott, A. et al.; Wood, Herron

& Evans, LLP, 441 Vine Street, 2700 Carew Tower, Cincinnati, OH 45202 (US).

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[Continued on next page]

(54) Title: BROADBAND WAVEGUIDE

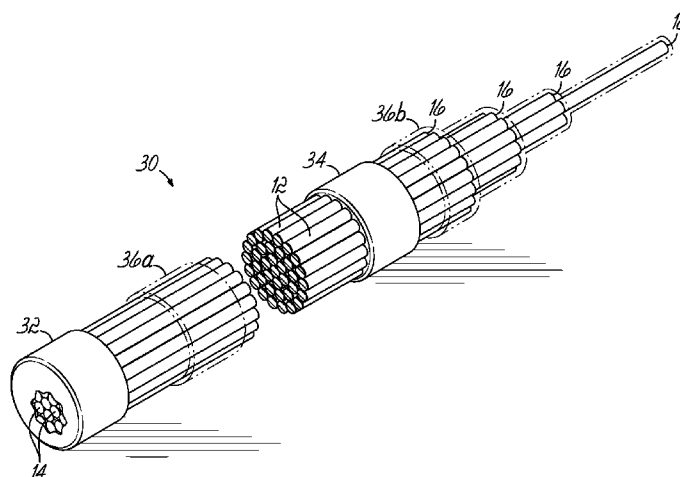


FIG. 2

(57) Abstract: A broadband waveguide (10) incorporates various reflection suppression techniques to reduce reflections in signals communicated thereby. The waveguide includes one or more filaments (12) that each include a first and second end (14, 16). A first matrix (18) may be configured proximate the first end(s) while a second matrix (20) may be configured proximate an intermediate location between the first and second ends. A damping material (22b) may cover a portion of the filament(s) that extends from the second matrix to the second end(s) (including the second end(s) themselves) and/or the second end(s) of the filament(s) is/are shaped to at least partially suppress reflections of the signal therefrom. When configured with multiple filaments, at least two of the filaments may have differing lengths that extend from the second matrix and also operate to at least partially suppress reflections of a signal.





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(15) Information about Correction:

Previous Correction:
see Notice of 8 November 2012

INTERNATIONAL SEARCH REPORT

International application No PCT/US2012/030287

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H01P3/06 H01B11/20 G01N29/00 H01P5/02 H01P5/08
 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)
 H01P H01B G01N

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)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/136040 A1 (SUMITOMO ELECTRIC INDUSTRIES [JP]; SHIBATA TADAKAZU [JP]; YOKOI KIYONO) 29 November 2007 (2007-11-29)	1-14, 20-22, 28,30, 31,33, 34,39, 41-54, 60,61, 63,65, 67,68, 73,75
Y	abstract; figures 3-4 ----- -/--	23-27, 38,40, 62,72,74

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 3 February 2016	Date of mailing of the international search report 09/02/2016
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Pastor Jiménez, J
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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/030287

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 467 818 A1 (FRANCE TELECOM [FR]) 22 January 1992 (1992-01-22) column 1, line 19 - column 2, line 14; figures 1,2 column 4, line 20 - column 5, line 42; figure 3	23-27, 38,40, 62,72,74
X	----- EP 1 566 815 A2 (SUMITOMO ELECTRIC INDUSTRIES [JP]) 24 August 2005 (2005-08-24) paragraph [0005] - paragraph [0007] paragraph [0015] - paragraph [0021]; figures 1A-2B	1,33,34, 39,41, 60,61, 63,65, 67,68, 73,75
A	----- EP 1 014 525 A1 (MATSUSHITA ELECTRIC IND CO LTD [JP]) 28 June 2000 (2000-06-28) paragraph [0046] - paragraph [0061]; figures 5-9	1,28,31, 38,39, 41,63, 65,69, 72,73,75
A	----- US 6 413 103 B1 (MERZ NICHOLAS G L [US] ET AL) 2 July 2002 (2002-07-02) column 5, line 19 - column 6, line 59; figures 2A-2B	1,28,31, 38,39, 41,63, 65,69, 72,73,75
A	----- EP 0 053 036 A1 (RAYCHEM CORP [US]) 2 June 1982 (1982-06-02) page 6, line 14 - line 23; figure 3 -----	1,28,31, 38,39, 41,63, 65,69, 72,73,75

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/030287

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:

see additional sheet

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 an additional fees, this Authority did not invite payment of 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.:

1-14, 20-28, 30, 31, 33, 34, 38-54, 60-63, 65, 67, 68, 72-75

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14, 20-28, 30, 31, 33, 34, 38-54, 60-63, 65, 67, 68, 72-75

A broadband waveguide comprising a damping material engaging at least a portion of the plurality of filaments wherein at least one of the plurality of filaments are shaped.

2. claims: 15-19, 29, 32, 35-37, 55-59, 64, 66, 69-71, 76

A broadband waveguide comprising a sensor configured to measure a signal communicated along the plurality of filaments of the waveguide.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/030287

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