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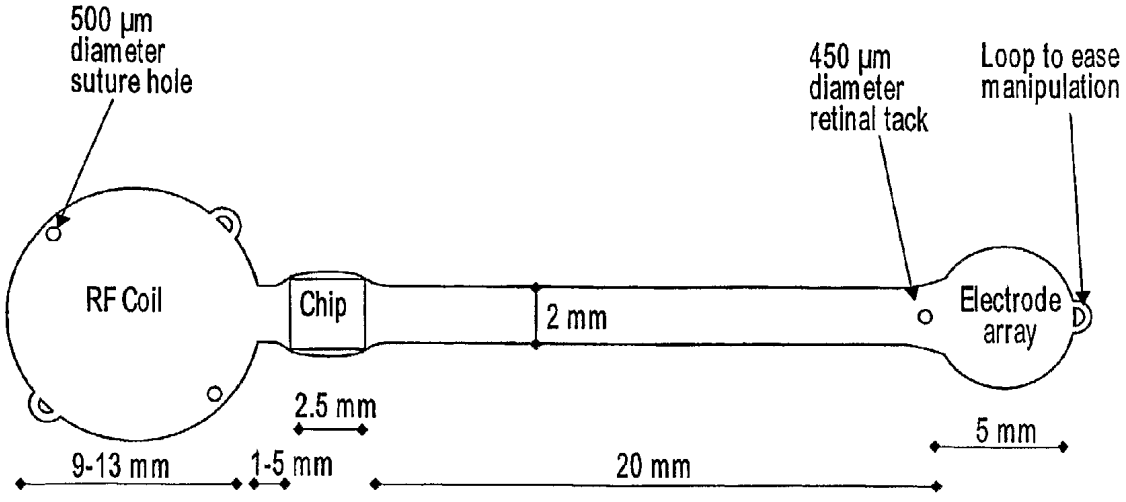
[Continued on next page]

(54) Title: BATCH-FABRICATED FLEXIBLE INTRAOCULAR RETINAL PROSTHESIS SYSTEMS AND METHODS FOR MANUFACTURING THE SAME



(57) Abstract: Intraocular retinal prosthesis systems and methods for fabricating the same are provided. In one aspect, fabrication of all or multiple components of a prosthesis device or system are combined into a single monolithic fabrication process. Also, many such entire systems can be fabricated simultaneously in a single microfabrication processing run. A prosthesis device includes a cable region that connects an electrode array region with a power and data management region. The electrode array region includes one or more arrays of exposed electrodes, and the power and data management region includes various power and control elements. The power and data management elements, in one aspect, include an RF coil or coils and circuit arrangements and/or chips configured to provide drive signals to the electrodes via a cable and receive power and signals from the RF coil or coils. Each region includes elements fabricated on or in a single polymer layer during the same fabrication process.

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RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv))*

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/16070

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **A61F 2/14**(2006.01),**9/08**(2006.01);**A61N 1/18**(2006.01),**1/36**

(2006.01)

USPC: 29/825,829,846,847,850,874,876,884;607/54,116;623/6.63
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. : 29/825,829,846,847,850,874,876,884;607/54,116;623/6.63

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/0158588 A1 (RIZZO et al) 21 August 2003 (21.08.2003), entire document, especially paragraphs [0043],[0056], and [0057] as well as figure 3	1-16
Y	US 2002/0198573 A1 (NISCH et al) 26 December 2002 (26.12.2002), entire document, especially paragraphs [0092]-[0094] and figure 2	1-16
Y	BANKS. R.H. Laser Generated Conductive Lines IBM tech. dis. bull. August 1976, Vol 19. No. 3, page 1014	2
Y	US 5,471,073 A (KOHNO) 28 November 1995 (28.11.1995), column 2, lines 24-35	7,8,16
Y	US 5,735,721 A (CHOI) 7 April 1998 (07.04.1998), abstract	9-11
Y	US 2003/0187491 A1 (GREENBERG et al) 2 October 2003 (02.10.2003) ,paragraph [0006] and figure 1	14, 15
A	WO 2004/014479 A2 (SECOND SIGHT MEDICAL PRODUCTS) 19 February 2004 (19.02.2004), pages 6-8	1-16

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

* Special categories of cited documents:

"A" document defining the general sate 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
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/16070

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,324,429 B1 (SHIRE et al) 27 November 2001 (27.11.2001), entire document, especially line 54 of column 5 to line 44 of column 6 and figure 3	1-16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/16070

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:
Please See Continuation 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 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.: 1-16

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.

BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-16, drawn to a method of making a retinal prosthesis.

Group II, claim(s) 17-24, drawn to a prosthesis device.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: US Patent 5,935,155, US Patent Publication 2002/0111658, and US 6718,209 demonstrate that there is no special technical feature claimed in that electrodes connected with a cable was known.