



(51) International Patent Classification:
G09B 21/00 (2006.01)

(21) International Application Number:
PCT/IL2009/000336

(22) International Filing Date:
25 March 2009 (25.03.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/039,277 25 March 2008 (25.03.2008) US

(71) Applicant (for all designated States except US): **TECHNION RESEARCH & DEVELOPMENT FOUNDATION LTD.** [IL/IL]; Senate House, Technion City, 32000 Haifa (IL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SIVAN, Uri** [IL/IL]; Mosad HaTechnion, Neve-ShaAnan, 32000 Haifa (IL). **BROD, Elad** [IL/IL]; 4 HaDekel Street, 36056 Tivon (IL).

(74) Agents: **G.E EHRlich (1995) LTD.** et al.; 11 Menachem Begin Street, 52521 Ramat Gan (IL).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHOD AND DEVICE FOR TACTILE PRESENTATION

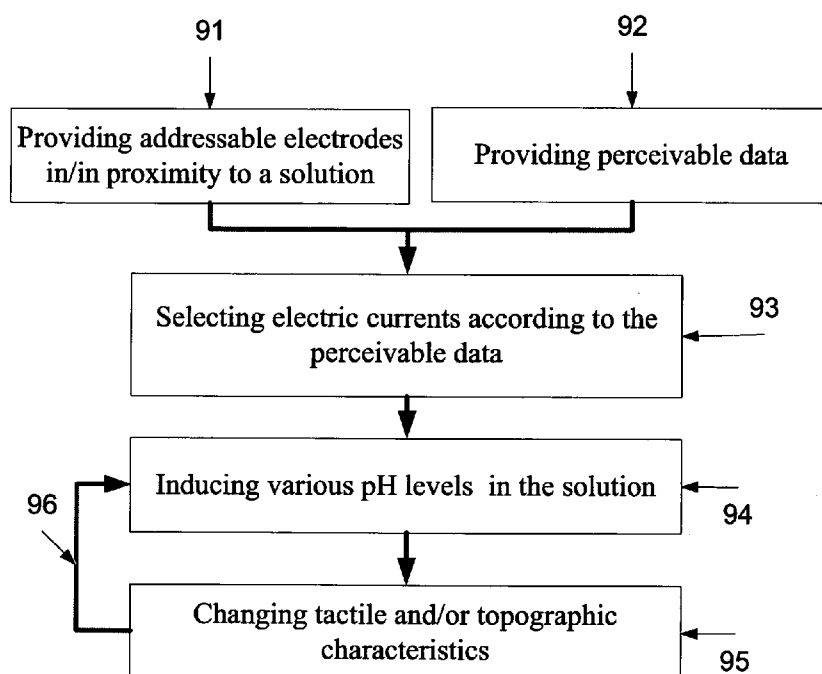


FIG. 1

(57) Abstract: A method for a tactile presentation of perceivable content. The method comprises receiving a data representing perceivable content, selecting a plurality of electric currents according to the data, each electric current is associated with at least one of a plurality of regions of a solution having a plurality of macro-molecules, and changing a level of acidity (pH) of at least one of the plurality of regions by applying a respective electric current thereto. A proton concentration in the plurality of regions tactilely presents the perceivable content.

**Published:****(88) Date of publication of the international search report:**

28 January 2010

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No

PCT/IL2009/000336

A. CLASSIFICATION OF SUBJECT MATTER

INV. G09B21/00

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)

G09B

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 199 12 307 A1 (BAUMGAERTNER MICHAEL [DE]; BAUMGAERTNER MANFRED [DE]; BAUMGAERTNER BEA) 28 September 2000 (2000-09-28)	24
Y	the whole document	1-21
X	US 2002/171081 A1 (VINCENT JOHN B [US] ET AL) 21 November 2002 (2002-11-21) abstract paragraphs [0026] - [0028], [0031], [0037]	24
X	US 2003/179432 A1 (VINCENT JOHN B [US] ET AL) 25 September 2003 (2003-09-25) abstract paragraphs [0002], [0003], [0015] - [0017], [0024] - [0026]	24
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☒ 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

"E" earlier document but 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

1 October 2009

Date of mailing of the international search report

11/12/2009

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

Gabriel, Christiaan

INTERNATIONAL SEARCH REPORT

International application No
PCT/IL2009/000336

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE 102 26 746 A1 (WUENSCHMANN WOLFGANG [DE]; RICHTER ANDREAS [DE]; DIERIGEN HANS-GUENTHE) 24 December 2003 (2003-12-24) abstract paragraphs [0012], [0014], [0019] - [0021], [0024] -----	1-21
A	SJ KIM ET AL: "Bending behavior of hydrogels composed of poly(methacrylic acid) and alginate by electrical stimulus" 1 October 2004 (2004-10-01), POLYMER INTERNATIONAL, SOCIETY OF CHEMICAL INDUSTRY, GB, PAGE(S) 1456 - 1460 , XP009122395 ISSN: 0959-8103 [retrieved on 2004-07-21] cited in the application the whole document -----	1-21
A	US 5 580 251 A (GILKES ALAN M [US] ET AL) 3 December 1996 (1996-12-03) abstract column 5, lines 6-15 -----	1-21
A	DE 10 2004 061731 A1 (UNIV DRESDEN TECH [DE]) 6 July 2006 (2006-07-06) abstract paragraphs [0012], [0019], [0022] -----	1-21
A	TAYLOR P M ET AL: "Advances in an electrorheological fluid based tactile array" 15 May 1998 (1998-05-15), DISPLAYS DEVICES, DEMPA PUBLICATIONS, TOKYO, JP, PAGE(S) 135 - 141 , XP004128263 ISSN: 0141-9382 Sections 1,2 -----	1-21
A	WO 2006/128825 A (SIEMENS AG [DE]; KANITZ ANDREAS [DE]; ROTH WOLFGANG [DE]) 7 December 2006 (2006-12-07) page 1 -----	24

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2009/000336

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.:

1-21, 24

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: 1-21,24

Tactile or visual presentation of perceivable content by changing the level of acidity of a pH responsive material through electrolysis.

2. claims: 22,23

Touch sensor based on detecting a pH change of a material being touched.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IL2009/000336

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