>lingway|

Solutions in language processing

Multilingual access to Intellectual Property Information

Bernard Normier

Langtech, Nov. 2003

>Lingway¢

- Products
  - Applications based on NLP
  - Knowledge management, text mining
  - Vertical applications: Patents, Pharma
- Customers and partners

>lingway¦

>Patent information: a very large technical corpus¢

- 1 million new documents / year
  - including 200,000 in Europe
- 80% of technical information
  - is published in patent documentation
- 60,000 companies
  - use patents in Europe

>User needs¢

- Get relevant patents in time
  - Critical information for technological and marketing watch
  - Time is essence of watch
- Typical flow = 500-1000 patents/month
  - Downloaded from patent databases
  - Need for « fast reading » tools
  - Don't miss the important information !
- Hide and seek game
  - Get a protection without being easily found
  - The important info is often hidden somewhere in the patent document (10 – 50 pages)

>New needs¢

- Search by non-specialists in large companies
  - Not only Intellectual Property department, but directly Researchers, Engineers, Lawyers
  - Free databases availables on Internet
    - EPO, USPTO, etc.
- SMEs are new users
  - With no expertize in Information management

>lingway¦

>Patent databases¢

- Indexed by the IPC
  - International classification of 60,000 entries
  - 14 levels depth
  - Very complex to use
- Multilingual corpus
  - First published in the language of the original national patent office
  - Delivery time for availability in other languages
  - In any case, not available in all languages
- Value added commercial offer
  - Abstracts manually rewritten and/or translated by experts
    => delivery time and cost !

>lingway¦

>NLP based solution¢

- > Multilingual search
  - > On external or internal servers
- > Categorization
  - > Send patents to the relevant experts in the company
- > Reading aids (micro-analysis)
  - > Summarization, vizualization, translation
- > Clutering, extraction (macro-analysis)
  - > Global vizualization tools

>Multilingual search¢

- Based on a multi-layer dictionnary
  - 3 levels inherited from Genelex – Eagles model
  - Generic ontology level with about 70.000 concepts
  - Mappings between ontology and taxonomy (IPC)
- Currently supporting X-IR between
  - French, English, Spanish, German. Portuguese and Dutch under development
  - Using the Connexor morphological tagger
- Combining IPC and abstract search
  - Query is categorized on IPC Query is translated in boolean search on abstracts
  - Merging and ranking the 2 sets of results

>lingway¦

>lingway Patent Access Demo

▶ Brevets > Langage naturel

protection des systemes electroniques contre la foudre

RECHERCHER

Langue d'interrogation Reco. automatique (français) *Base* FPAT

International Patent Classification [v7]

H - SECTION H -- ÉLECTRICITÉ

H02 - PRODUCTION, CONVERSION OU DISTRIBUTION DE L'ÉNERGIE ÉLECTRIQUE

H02H - CIRCUITS DE PROTECTION DE SÉCURITÉ

H02H-009/00 - Circuits de protection de sécurité pour limiter l'excès de courant ou de tension sans déconnexion (association s

H02H-009/02 - Circuits de protection de sécurité pour limiter l'excès de courant ou de tension sans déconnexion (association structure

H02H-009/04 - Circuits de protection de sécurité pour limiter l'excès de courant ou de tension sans déconnexion (association structure

H02H-009/08 - . Limitation ou suppression des courants de défaut à la terre, p.ex. bobine Petersen

Brevets

H02

PRODUCTION, CONVERSION OU DISTRIBUTION DE L'ÉNERGIE ÉLECTRIQUE

FR INSTALLATION DE PROTECTION CONTRE LA FOUDRE

INSTALLATION DE PROTECTION CONTRE LA FOUDRE

COLOMBANI DON PIERRE

REGIMBEAU

1980-02-15 (BOPI 1980-07)

FR2431787

H02H-009/00

L'invention concerne un procédé de protection d'installations électriques contre la foudre. On relie la masse des appareils électriques à une première prise de terre, on relie un paratonnerre aérien à une seconde prise de terre, et on construit dans le sol entre les deux prises

>lingway Patent Access Demo

Brevets > Langage naturel

protection des systemes electroniques contre la foudre

RECHERCHER

Langue d'interrogation Reco. automatique (français) *Base* FPAT

International Patent Classification [v7]

B - SECTION B -- TECHNIQUES INDUSTRIELLES DIVERSES; TRANSPORTS

B64 - AÉRONAUTIQUE; AVIATION; ASTRONAUTIQUE

B64D - INSTALLATIONS OU ÉQUIPEMENTS À BORD DES AÉRONEFS; COMBINAISONS DE VOL; PARACHUTES; INSTALLATIONS OU

B64D-045/00 - Indicateurs ou dispositifs de protection d'aéronefs, non prévus ailleurs

B64D-045/02 - . Dispositifs de protection contre la foudre ; Déperditeurs de potentiel

Brevets

B64

AÉRONAUTIQUE; AVIATION; ASTRONAUTIQUE

- EP ADHESIVELY BONDED JOINTS IN CARBON FIBRE COMPOSITE
- EP Electrostatic discharger for an aircraft
- EP Lightning protection system for composite material aircraft structures.
- EP Lightning protection of fasteners in composite material.
- EP Lightning protection fastener.
- EP Lightning protection system for conductive composite material structure.
- EP Anti-lightning strike fasteners for composite material aircraft structures.
- EP Method for forming a high-conductivity junction between composite
- EP Precipitative static drain strip system.
- EP Apparatus for providing a lightning protective vehicle surface.
- EP Electrical continuity means for composite joints.
- EP Fastener for carbon fibre structure.

ADHESIVELY BONDED JOINTS IN CARBON FIBRE COMPOSITE STRUCTURES

BAE SYSTEMS plc / Warwick House, P.O. Box 87, Farnborough Aerospace Centre / Farnborough, Hampshire

BAE SYSTEMS plc

2001-01-17

EP1068130

B64D-045/02

>lingway Patent Access Demo

Brevets > Langage naturel

protection des systemes electroniques contre la foudre

RECHERCHER

Langue d'interrogation Reco. automatique (français) *Base* EPAT

International Patent Classification [v7]

H - SECTION H -- ÉLECTRICITÉ

H01 - ÉLÉMENTS ÉLECTRIQUES FONDAMENTAUX

H01R - CONNEXIONS CONDUCTRICES DE L'ÉLECTRICITÉ; ASSOCIATION STRUCTURELLE DE PLUSIEURS ÉLÉMENTS DE CONNE

H01R-013/00 - Détails de dispositifs de couplage des types couverts par les groupes

✓ **H01R-013/66 - Détails de dispositifs de couplage des types couverts par les groupes**

H01R-013/68 - . . avec fusible incorporé

H01R-013/70 - . . avec interrupteur incorporé

Brevets

H01

ÉLÉMENTS ÉLECTRIQUES FONDAMENTAUX

EP Electronic assembly

Electronic assembly

LUCAS INDUSTRIES public limited company / 46 Park Street / London W1Y 4DJ (GB)Lucas Industries Limit

LUCAS INDUSTRIES public limited companyL

1999-11-24

EP959651

H01R-013/66

Abstract in publication languageAn electronic assembly is provided that has a housing (10) receiving a motherboard arranged, in use, to carry control circuit components, and a circuit board (14) carrying a lightning strike protection circuit, said circuit board (14)

>lingway **Patent Access Demo**

Patents > Natural language searches

micromachined aerials | **SEARCH**

Query language Automatic recognition (english) ***Base*** EPAT

International Patent Classification [v7]

- H - SECTION H -- ELECTRICITY
  - H01 - BASIC ELECTRIC ELEMENTS
    - H01Q - AERIALS
      - ✓ **H01Q-021/00 - Aerial arrays or systems**
        - H01Q-021/06 - . Arrays of individually energised aerial units similarly polarised and spaced apart
        - H01Q-021/24 - . Combinations of aerial units polarised in different directions for transmitting or receiving circularly and elliptically po
        - H01Q-021/28 - . Combinations of substantially independent non-interacting aerial units or systems
        - H01Q-021/29 - . Combinations of different interacting aerial units for giving a desired directional characteristic

Brevets

H01

BASIC ELECTRIC ELEMENTS

- US Micromachined monolithic reflector antenna system
- EP Slot coupled micromachined waveguide antenna
- EP Slot coupled micromachined waveguide antenna

Micromachined monolithic reflector antenna system

The Aerospace Corporation (El Segundo, CA)

Yarbrough; Allyson D. (Hermosa Beach, CA

February 18, 1998

US6008776

H01Q-021/00

A micromachined reflector antenna system is integrated onto a substrate by firstly etching a reflector aperture surface defining a dish cavity in an oxide layer and secondly rotating a hinge over the reflector aperture surface with the hinge being used as the reflector central feed. The micromachined reflector antenna system can

>lingway

Language IPC code

Search antenna | English | H01Q-021/(| OK

EARCH

antenna, EN

> **antenna.1**, Noun [instrument] **Telecommunications** : *sends or receives radio or television signals*. Syn: **aerial**

fr antenne

de Antenne, Empfangsantenne

es antena

> **antenna.2**, Noun [pcorps, animal] **Anatomy, Entomology** : *one of a pair of mobile appendages on the head of e.g. insects and crustaceans; typically sensitive to touch and taste*. Syn: **feeler** Gen: **tentacle**

fr antenne, palpeur, palpage

de Antenne, Fühler

es antena, bigote, cuerno

nd spaced apart

transmitting or receiving circularly and elliptically po

l units or systems

omachined monolithic reflector antenna system

Aerospace Corporation (El Segundo, CA)

rough; Allyson D. (Hermosa Beach, CA

February 18, 1998

US6008776

H01Q-021/00

A micromachined reflector antenna system is integrated onto a substrate by firstly etching a reflector aperture surface defining a dish cavity in an oxide layer and secondly rotating a hinge over the reflector aperture surface with the hinge being used as the reflector central feed. The micromachined reflector antenna system can

> Reading aids (micro-analysis)¢

- Two features based on the same XML tagging
  - Entity extraction:
    - person names (+ their role)
    - Company names, patent references, etc.
  - Sentence identification
    - Patent object, invention advantage, previous drawbacks, independant claims
- Summarization
  - A collection of selected entities and sentences
- Visualization:
  - Navigation in the document thru the XML tagging

Contents

Synthetic Views

Person(s) : 16 Occurences

Person	Nb	Occurences
A.D. Yarbrough	1	>1
Cole; Robert C.	1	>1
D. Rutledge	1	>1
Das	1	>1
Fletcher	1	>1
G. Rebeiz	1	>1
K.S.J. Pister	1	>1
Le; Hoanganh	1	>1
Malos; Jennifer H.	1	>1
N.W. Judy	1	>1
Osofsky; Samuel S.	1	>1
R.S. Fearing	1	>1
Reid; Derrick Michael	1	>1
Robertson; Ruby E.	1	>1
S.R. Burgett	1	>1
Yarbrough; Allyson D.	1	>1

Micromachined monolithic reflector antenna system

United States Patent: 6,008,776

(108 of 181)

United States Patent

6,008,776

Yarbrough ,   et al.

December 28, 1999

Micromachined monolithic reflector antenna system

Abstract

A micromachined reflector antenna system is integrated onto a substrate by firstly etching a reflector aperture surface defining a dish cavity in an oxide layer and secondly rotating a hinge over the reflector aperture surface with the hinge being used as the reflector central feed. The micromachined reflector antenna system can be made with an array of reflector antennas and integrated onto a single substrate with front end receiver circuits operating as a high frequency receiver on a chip with reduced size and cost and operating at hundreds of GHz.

Inventors:

Yarbrough; Allyson D. (Hermosa Beach, CA); **Osofsky; Samuel S.** (Torrance, CA); **Robertson; Ruby E.** (Los Angeles, CA); **Cole; Robert C.** (Rancho Palos Verdes, CA)

Assignee:

The Aerospace Corporation (El Segundo, CA)

Appl. No.:

surface with the hinge being used as the reflector central feed. The micromachined reflector antenna system can

MEMS	19	>1>2>3>4>5>6>7>8>9>10>1

Patent Object(s) : 5 Occurences

Confidence	Patent Object
+++	An object of the present invention is to provide a microelectromechanical systems (MEMS) reflector antenna on a substrate having a suspended integrated feed.
+++	Another object of the present invention is to provide a MEMS reflector array on a single substrate that has a suspended integrated feed.
+++	Another object of the invention is to provide an integrated receiver having a MEMS reflector and front end communication receiver circuits integrated on a single substrate.
+++	The present invention is directed to the function and fabrication of micromachined reflector antenna arrays integrated on the same wafer as an integrated receiver for use in communication systems.
+++	An embodiment of the invention is described with reference to the figures using reference designations as shown in the figures. Referring to FIG. 1, a monolithic microwave integrated circuit 10 is an integrated front end receiver system comprising an integrated feed network 11 connected to reflector antennas 12 comprises a plurality of reflector antennas 12a-c.

reflector antenna on a substrate having a suspended integrated feed. Another object of the present invention is to provide a MEMS reflector array on a single substrate that has a suspended integrated feed. Another object of the invention is to provide an integrated receiver having a MEMS reflector and front end communication receiver circuits integrated on a single substrate. The present invention is directed to the function and fabrication of micromachined reflector antenna arrays integrated on the same wafer as an integrated receiver for use in communication systems. A microelectromechanical systems (MEMS) reflector is formed on a substrate preferably integrated with a front end receiver circuit on the substrate chip for high frequency low noise wireless communication. The operating frequency range of interest for these reflectors is in the approximate millimeter-wavelength range above thirty GHz. Fabrication can use existing semiconductor batch-processing techniques. The reflector and receiver circuit combine to produce a millimeter-wave front end receiver on a chip. The invention is a method of manufacturing a MEMS reflector by having a reflector surface etched into the reflector layer and then rotating a hinge over the reflector surface with the hinge then functioning as a reflector central feed. The reflector is made preferably by etching a reflector dish cavity into a spin-on glass film or appropriate substrate surface and then rotating a hinge at one end with the other end released. The hinge is positioned in the center of the reflector dish cavity. The front end receiver consists of an antenna or reflector, and an integrated feed network connecting the antenna to the low-noise amplifier. The small size of the individual MEMS reflectors provides high frequency operation. The integration of the reflector array on a substrate also supporting the low noise amplifier reduces noise and losses in the received-signal path to improve the reception of low-level high frequency signals. Multiple wafer layers of material are not required to fabricate the array. These and other advantages will become more apparent from the following detailed description of the preferred embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 depicts a microelectromechanical systems (MEMS) integrated receiver having both reflector antennas and front end receiver circuits integrated on a single substrate. FIGS. 2a-e are diagrams of a substrate to be processed to form a MEMS reflector on the substrate. DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

An embodiment of the invention is described with reference to the figures using reference designations as shown in the figures. Referring to FIG. 1, a monolithic microwave integrated circuit 10 is an integrated front end receiver system comprising an integrated feed network 11 connected to reflector antennas 12 comprises a plurality of reflector antennas 12a-c. The antennas 12 are connected to a front end receiver circuit 13 through the network 11. The receiver circuit 13 is of a conventional design using conventional integrated semiconductor processes. The receiver circuit 13 comprises by way of example, a low noise amplifier 14, a band pass filter 16 providing a radio frequency RF signal to a mixer 18 receiving a local oscillator (LO) signal 20 through another band pass filter 22 for down converting a received RF signal into an IF signal. The mixer 18 provides the IF signal to another band pass filter 24 which provides an intermediate frequency (IF) signal 26 as an output. The reflectors 12a-c are made using microelectromechanical systems (MEMS) processes and conventional semiconductor processes as more clearly depicted in FIGS. 2a-e. Referring to FIGS. 2a-e, a MEMS reflector is preferably made upon a substrate 40 with a surface of appropriate crystalline orientation. The substrate may be bulk silicon. The substrate 40 has a thick dielectric, such as an oxide or spin-on glass deposited as a film 42 and disposed on top of the substrate 40. A metal film 44 is then deposited on top of the oxide film 42 and then patterned. The metal film 44 should be a low-resistivity, refractory metal such as tungsten, capable of withstanding the high temperatures of the subsequent polysilicon processes. The opening 45 in the patterned metal film 44 defines the diameter of the MEMS reflector. Both the thickness of the representative oxide film 42 and the diameter are determined by the desired frequency of operation. A first sacrificial layer 46, preferably of silicon dioxide, is deposited on the metal film 44 and patterned and etched. A feed beam 47 is deposited on the sacrificial layer 46. The feed beam 47 is preferably made of polysilicon. The feed beam 47 is a narrow beam portion of a hinge. The beam portion 47 has a hole

	and bonded or fused together to complete the antenna structure.
+	These components offer high-frequency operation but do not include a MEMS reflector antenna having a central feed suspended entirely above the plane of the cavity aperture, all on a single wafer.
+	While MEMS processes can release a structure to be suspended, MEMS processes have not been applied to the manufacture of integrated reflectors having central feeds suspended above the plane of the cavity aperture on a single wafer.
+	These and other disadvantages are solved or reduced using the invention.

Advantage(s) / Improvement(s) : 2 Occurences

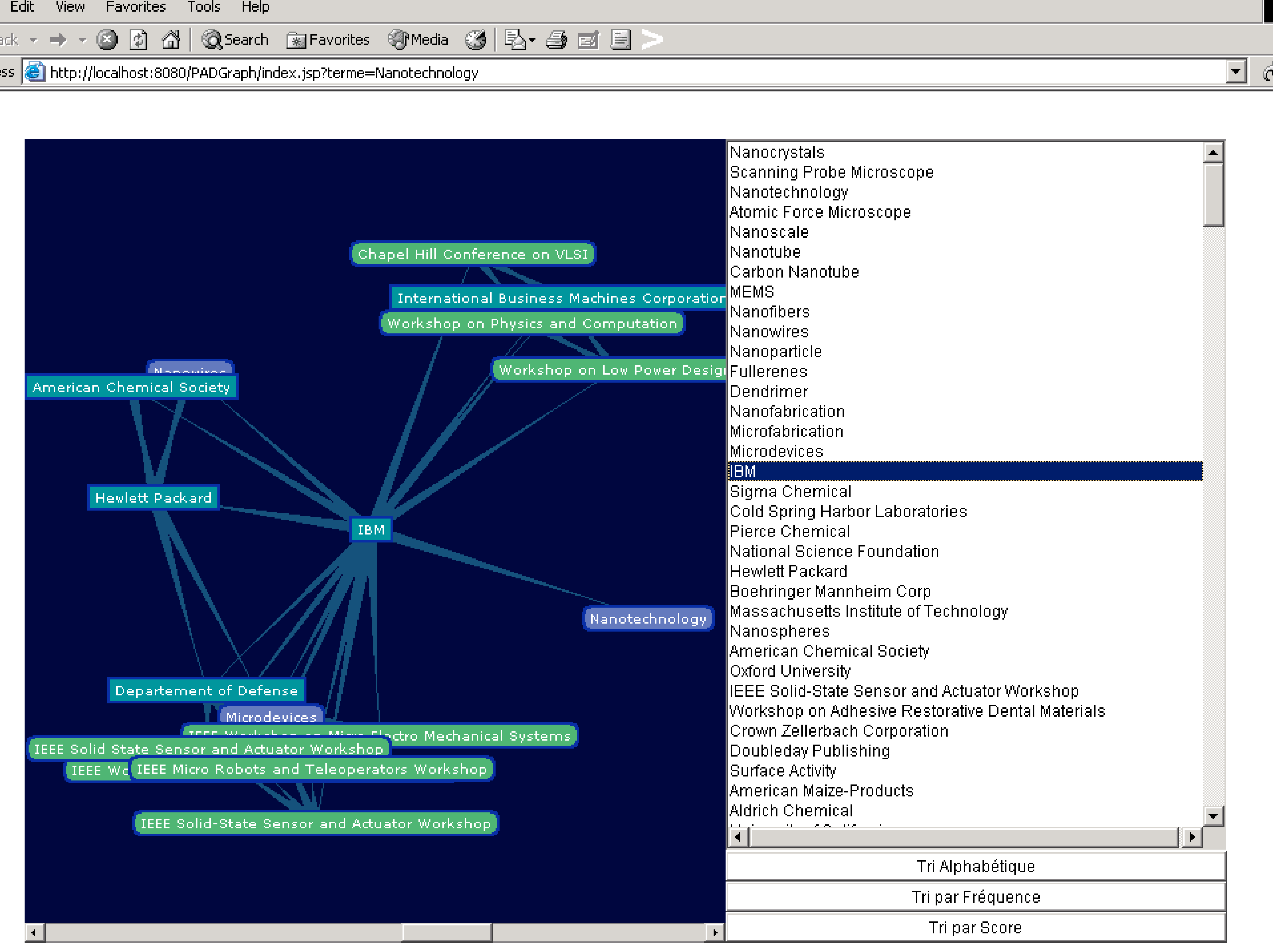
Confidence	Advantage
+++	It is desirable for communications satellites to use higher frequencies, to avoid not only terrestrial microwave-link congestion and noise but also traffic from other users.
+++	As components of sufficiently high performance are developed and become available, it will be desirable to design satellites that take full advantage of these frequencies.

communications systems. ***It is desirable for communications satellites to use higher frequencies, to avoid not only terrestrial microwave-link congestion and noise but also traffic from other users.*** There are also other considerable advantages. First, the beamwidth of an antenna narrows as the frequency increases, that is, the beamwidth of an antenna is inversely proportional to both the antenna aperture and the frequency of transmission, so greater numbers of satellites can relay to the same ground antenna without interfering with each other. Second, moving to higher frequencies also allows the use of smaller onboard satellite antennas, reducing weight. At millimeter-wave frequencies, electrically large but physically small antenna structures become feasible because of the short wavelengths involved. **Finally, in the 2-4 GHz C-band, limits are imposed on radiated power to prevent *interference* with terrestrial microwave links. These limits either *do not* exist or are greatly relaxed at the higher frequencies.** At frequencies much above C-band, the electronics in the receiver produce most of the noise that competes with the desired signal. However, at frequencies above 10 GHz, the atmospheric absorption of RF signals causes massive propagation losses. **To overcome these losses, operation at higher, less-congested frequency regimes *requires* not only components that deliver much higher performance, but also highly sophisticated ground stations with larger antennas. Also, oxygen and water absorption resonances occur between 60 GHz and 125 GHz, providing opportunities for intersatellite communications that are virtually immune to *interference* or jamming from the ground.** ***As components of sufficiently high performance are developed and become available, it will be desirable to design satellites that take full advantage of these frequencies.*** A typical communications payload is one quarter of the dry mass of a satellite. Applying micromachining technology to payloads can achieve significant savings in weight and cost. For example, a waveguide used for routing signal energy between and within subsystems, can be integrated into the bulk substrate of a microwave integrated circuit, reducing the need for external metal waveguide sections and combiners. Presently, the silicon or gallium arsenide substrate upon which microwave integrated circuits are fabricated provides a mechanical support for the active semiconductor layers and the metalization and may serve as a heat sink. Mobile systems and dynamic communication networks can be made more compact and versatile by micromachining and exploiting unused substrate volume. **Personal communications systems increasingly *require* the use of lightweight, low-cost receivers.** A large number of compact circuits of modest performance can be produced. Micromachining technology can meet the need for integrated subsystems by using semiconductor substrate material for multilevel and buried interconnects. The development of micromachining technology would allow inexpensive, batch-fabricated devices to be used in personal communication systems. Miniature horn and reflector antennas as well as arrays have been investigated and some have been fabricated with the use of available micromachining techniques. An integrated horn antenna for millimeter-wave applications has been suggested and a 802 GHz imaging array, double polarized antennas, monopulse antennas, and high-gain, step-profiled, diagonal-horn antennas have been proposed. The integrated horn antenna included a pyramidal horn cavity at the bottom of which is a dipole antenna. The pyramidal horn cavity is fabricated on one substrate, while the dipole antenna element is deposited on a thin membrane fabricated on a separate wafer. **These two, and subsequent wafers *required*, are then carefully stacked, aligned and bonded or fused together to complete the antenna structure. These components offer high-frequency operation but *do not* include a MEMS reflector antenna having a central feed suspended entirely above the plane of the cavity aperture, all on a single wafer.** Additionally, as the frequency of operation of a subsystem increases, packaging and interconnect schemes assume critical importance. Often high performance can be achieved by advanced circuit designs which may be compromised by inefficient intrachip paths and packaging that leads to bottlenecks and losses. Communication systems presently use discrete antennas and reflectors, which are interfaced to the front-end of receiver systems via waveguide, coaxial or planar interconnects. However, these external connections to receiver circuits can inject noise into the received signal path, limiting the ability to distinguish low-level signals in the presence of noise. Reflectors and antennas typically have central feeds suspended above the reflector. **While MEMS processes can release a structure to be suspended, MEMS processes *have not* been applied to the manufacture of integrated reflectors having central feeds suspended above the plane of the cavity aperture on a single wafer. These and other *disadvantages* are solved or reduced using the invention.**

> Clutering, extraction (macro-analysis)¢

- Clustering of tagged entities
  - Companies, workshops, inventors, technologies
- Visualization:
  - Graphs of co-occurrences
- Expert tool for
  - Technological watch
  - Marketing watch

>lingway¦


Edit View Favorites Tools Help
Search
Favorites
Media
http://localhost:8080/PADGraph/index.jsp?terme=Nanotechnology
Chapel Hill Conference on VLSI
International Business Machines Corporation
Workshop on Physics and Computation
Workshop on Low Power Design
American Chemical Society
Hewlett Packard
IBM
Nanotechnology
Departement of Defense
Microdevices
IEEE Workshop on Micro Electro Mechanical Systems
IEEE Solid State Sensor and Actuator Workshop
IEEE Micro Robots and Teleoperators Workshop
IEEE Solid-State Sensor and Actuator Workshop
Nanocrystals
Scanning Probe Microscope
Nanotechnology
Atomic Force Microscope
Nanoscale
Nanotube
Carbon Nanotube
MEMS
Nanofibers
Nanowires
Nanoparticle
Fullerenes
Dendrimer
Nanofabrication
Microfabrication
Microdevices
IBM
Sigma Chemical
Cold Spring Harbor Laboratories
Pierce Chemical
National Science Foundation
Hewlett Packard
Boehringer Mannheim Corp
Massachusetts Institute of Technology
Nanospheres
American Chemical Society
Oxford University
IEEE Solid-State Sensor and Actuator Workshop
Workshop on Adhesive Restorative Dental Materials
Crown Zellerbach Corporation
Doubleday Publishing
Surface Activity
American Maize-Products
Aldrich Chemical
Tri Alphabétique
Tri par Fréquence
Tri par Score

>Future developments¢

- Title / abstract translation
  - Reuse the patent dictionary for MT
  - Interface with 3rd party MT engine for plain texts
- Focused categorization
  - Categorize on selected sentences only

>lingway Patent Access Demo

▶ Patents > Natural language searches

protection circuit for implantable device

SEARCH

Query language Automatic recognition (english) *Base* EPAT

International Patent Classification [v7]

- A - SECTION A -- HUMAN NECESSITIES
  - A61 - MEDICAL OR VETERINARY SCIENCE; HYGIENE
    - A61N - ELECTROTHERAPY; MAGNETOTHERAPY; RADIATION THERAPY; ULTRASOUND THERAPY
      - A61N-001/00 - Electrotherapy; Circuits therefor
        - A61N-001/18 - . Applying electric currents by contact electrodes
          - A61N-001/32 - . . alternating or intermittent currents
            - A61N-001/36 - . . . for stimulation, e.g. heart pace-makers
              - A61N-001/362 - . . . . Heart stimulators

Brevets

A61

MEDICAL OR VETERINARY SCIENCE; HYGIENE

EP Protection circuit for implantable electronic device.

EP Protection circuit for an implantable electronic device

Protection circuit for implantable electronic device.

ELA MEDICAL (Société anonyme) / 98-100, Rue Maurice Arnoux / F-92541 Montrouge Cédex (FR)

ELA MEDICAL (Société anonyme)

1995-03-08

EP641572

A61N-001/37

Abstract in publication language, translation not availableL'invention protège des circuits reliés à des électrodes de stimulation à faible énergie ou de détection, d'un dispositif médical implantable vis-à-vis d'impulsions e Edit View Favorites Tools Help

Back Search Favorites Media

dress http://localhost/trapat/cgi-bin/kwsum.pl?num=FR2708860&code=A61N-001/37 Go Links

Circuit de protection pour dispositif électronique implantable

invention concerne la protection des dispositifs électroniques implantables comprenant des électrodes utilisées pour étection ou stimulation à faible énergie, vis-à-vis d'impulsions de forte énergie. Elle comprend les stimulateurs ardiaques implantables et les défibrillateurs/stimulateurs cardiaques implantables.

ans le cas présent, le terme défibrillateur est utilisé pour désigner tout dispositif pour éliminer une tachyarythmie par ne énergie électrique dépassant sensiblement l'énergie fournie par les stimulateurs cardiaques implantables.

circuit of protection for electronic implantable apparatus

électrodes utilisées pour détection ou stimulation à faible énergie	électrode à énergie	power electrode
stimulation à faible énergie	stimulation à énergie	power input
impulsions de forte énergie	impulsion de énergie	power drive
	tissus du patient	diseased tissue
	défibrillateur externe	external defibrillator
	impulsions externes	external drive
	impulsions de défibrillation	defibrillation pulse
	électrodes de stimulation	input electrode

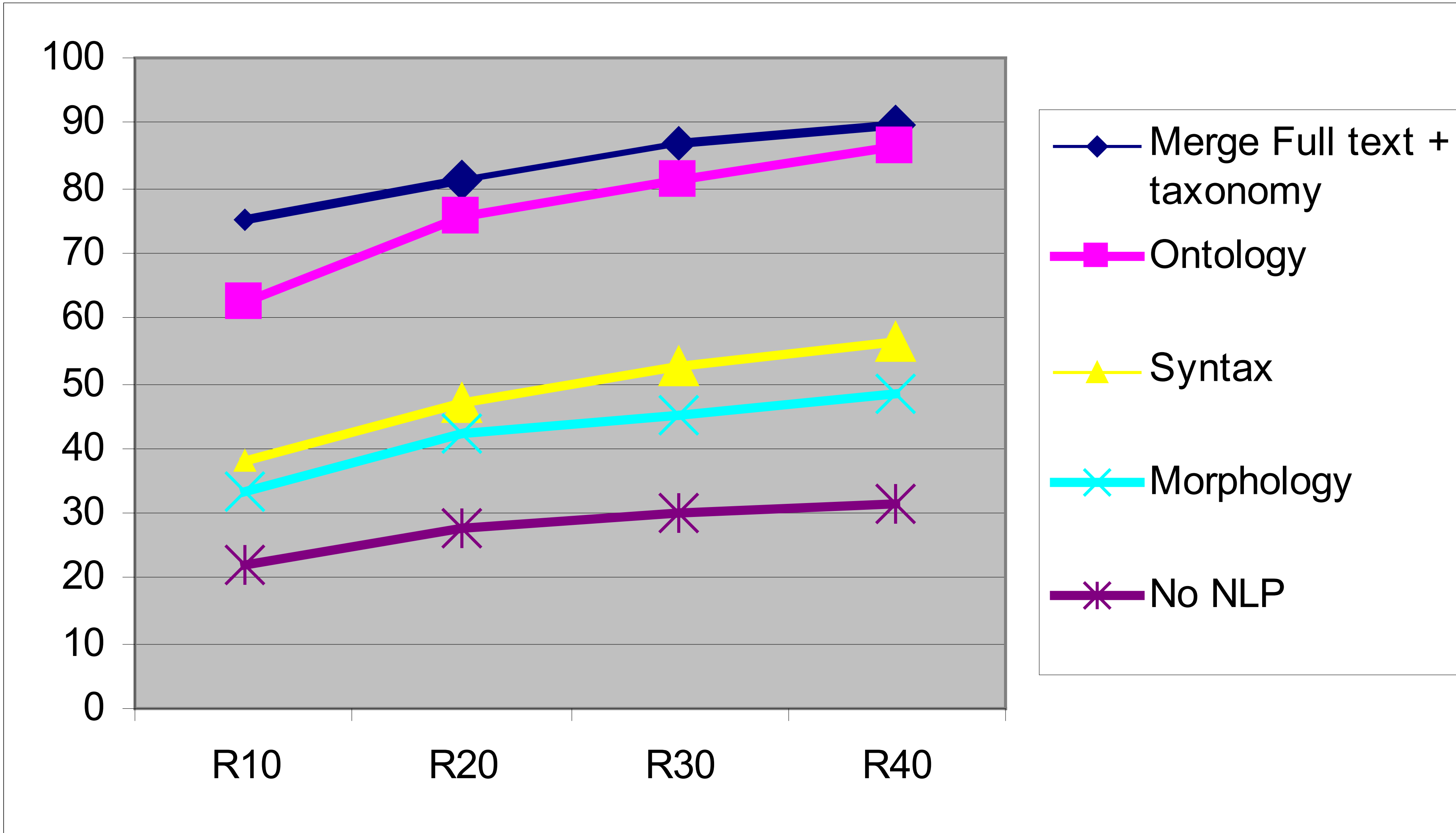
Done Local intranet

electronic device.

/ 98-100, Rue
ge Cédex (FR)

nslation not
uits reliés à des
électrodes de stimulation à faible énergie ou de détection, d'un dispositif médical implantable vis-à-vis d'impulsions de haute énergie générées par le dispositif lui-même et

Apport des connaissances linguistiques
Projet ePatent (programme eContent)



>lingway;

Thank you !

>lingway