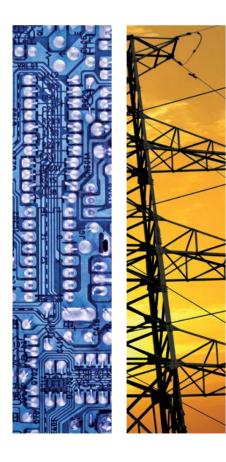


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# Subject Coverage

The Inspec database covers five main subjects to provide comprehensive coverage of the areas you need.



#### A - Physics

- A00 General
- A10 The physics of elementary particles and fields
- A20 Nuclear physics
- A30 Atomic and molecular physics
- A40 Fundamental areas of phenomenology
- A50 Fluids, plasmas and electric discharges
- A60 Condensed matter: structure, thermal and mechanical properties
- A70 Condensed matter: electronic structure, electrical, magnetic, and optical properties
- A80 Cross-disciplinary physics and related areas of science and technology
- A90 Geophysics, astronomy and astrophysics



#### B - Electrical Engineering and Electronics

- B00 General topics, engineering mathematics and materials science
- B10 Circuit theory and circuits
- B20 Components, electron devices and materials
- B30 Magnetic and superconducting materials and devices
- B40 Optical materials and applications, electro-optics and optoelectronics
- B50 Electromagnetic fields
- **B60** Communications
- B70 Instrumentation and special applications
- B80 Power systems and applications



#### C - Computers and Control

- COO General and management topics
- C10 Systems and control theory
- C30 Control technology
- C40 Numerical analysis and theoretical computer topics
- C50 Computer hardware
- C60 Computer software
- C70 Computer applications



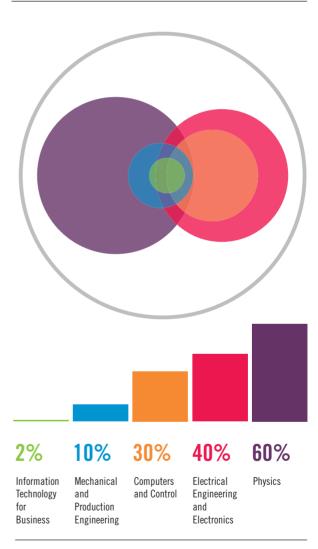
#### ) - Information Technology for Business

- D10 General and management aspects
- D20 Applications
- D30 General systems and equipment
- D40 Office automation communications
- D50 Office automation computing



#### **E - Mechanical and Production Engineering**

- E00 General topics in manufacturing and production engineering
- E10 Manufacturing and production
- E20 Engineering mechanics
- E30 Industrial sectors





#### 16 million records

Chart shows percentage of subject coverage in the database; subject coverage areas overlap.

# **Outline** of Inspec Coverage

#### The Inspec database covers five main subject areas to provide comprehensive coverage of the areas you need.

#### A - Physics

- elementary particle and nuclear physics
- atomic and molecular physics
- electro dynamics
- quantum physics
- nuclear structure
- nuclear energy
- optics
- acoustics
- fluid dynamics
- plasma physics
- condensed matter physics
- materials science
- biophysics
- geophysics
- astronomy
- astrophysics
- semiconductors
- superconductors
- magnetism
- lasers
- fibre optics
- instrumentation
- nuclear engineering
- energy research and environmental science
- gravitation and relativity
- statistical physics
- measurement science
- electromagnetism
- structural, thermal and mechanical properties of condensed matter

# B - Electrical Engineering and Electronics

- electronic components and technology
- telecommunications
- power engineering and instrumentation
- aerospace electronics
- antennas and propagation
- biomedical engineering
- electric machines
- electron tubes
- electronic circuits
- energy conversion
- image processing
- lacktriangle insulation
- lasers
- magnetic devices
- measurement
- microelectronics
- microwave technology
- military electronics
- nuclear instrumentation
- optical and optoelectronic devices
- power generation and supply
- printed circuits
- radar

- radiocommunications
- radio and television
- semiconductor technology
- signal processing
- speech processing
- superconducting devices
- engineering materials

#### **C** - Computers and Control

- artificial intelligence
- computer theory
- hardware
- software
- applications of computing
- optical computing
- neurocomputing
- computers themselves and their elements
- circuitry
- storage
- peripheral equipment
- networking
- application programs
- legal aspects of computing
- software engineering
- systems techniques
- systems analysis
- software metricscomputing applications
- expert systems
- decision support systems
- financial computing
- data, signal and word processing
- desktop publishing
- computer-aided analysis and design
- computer communications
- computerised control and instrumentation
- communications
- industrial production
- instrumentation
- control technology applications
- materials handling
- manufacturing processes
- transportation

# D - Information Technology for Business

- business
- banking and insurance
- leisure and the media
- marketing and retailing
- electronic mail
- facsimile
- teleconferencingviewdata
- computer terminals
- communicationsword processing

#### E - Mechanical and Production Engineering

- management issues
- manufacturing environment
- information technology
- applications
- production management
- design and ergonomics
- manufacturing processes
- manufacturing technology
- materials and products
- industrial sectors
- engineering mechanics



Inspec gives comprehensive cover of the subject areas and has material not found on other databases. Students having difficulty in finding relevant material to support their dissertations and projects find such material on Inspec.

The Inspec database is vast and covers the publications of numerous publishers and institutions, which 'full text' databases however good are unable to do so. A useful feature that Inspec provides is that it is easy to link from Inspec to the full text of subscribed titles from within the institution.

Shelley Ahmed, Subject Librarian, Faculty of Computing, London Metropolitan University, UK



# **Database** Records

Each Inspec record contains a wealth of specialized indexing to enable searchers to swiftly pinpoint the content that they need for their research.

#### Record fields

Each record in Inspec contains an English-language title and a descriptive abstract together with full bibliographic details. These include the author's name and affiliation as well as the publication title.

To supplement natural-language searching, Inspec provides an extensive range of search elements:



# Sample Record

#### 15 Millionth record

 INSPEC ACCESSION NO.:
 15,000,000

 UPDATE:
 2015-13

 DOCUMENT TYPE:
 Journal Paper

 MIN:
 ET76-B4020-A080

TITLE: Biochip technology applied to an automated ABO compatibility test at the patient bedside

AUTHOR(S): Charrie re, K.; Rouleau, A.2; Gaiffe,O. 2; Fertey, J.3; Morel, P.4; Bourcier, V.5; Pieralli, C.2; Boireau, W.2; Pazart, L.1;

Wacogne, B.1

AFFILIATION(S): • Besançon University Hospital, (INSERM-CIT 808), Besançon, France [Affiliation ID 55049]

• FEMTO-ST Institute, Besançon, France [Affiliation ID 88524]

• University of Franche-Comté, (ISIFC), Besançon, France [Affiliation ID 27000]

• Etablissement Français du Sang Bourgogne/Franche-Comté, Besançon, France [Affiliation ID 376941]

• Besançon University Hospital, (Hemovigilance Service), Besançon, France [Affiliation ID 55049]

JOURNAL: Sensors and Actuators B: Chemical, vol.208, 67-74

 PUBLICATION DATE:
 1 March 2015

 PUBLISHER:
 Elsevier B.V.

 ISSN:
 0925-4005

 JIN:
 ET76

 CODEN:
 SABCEB

**DOI:** 10.1016/j.snb.2014.10.123

LANGUAGE: English

**ABSTRACT:** In the field of blood transfusion, there is a need to improve the bedside pre-transfusion ABO compatibility test.

In France, this test is mandatory for each red cell concentrates transfusion. It is performed manually and serious transfusion accidents still occur, principally due to human errors. Therefore, an automated ABO compatibility test is required. Works concerning objective interpretation of ABO compatibility test have been reported but the proposed techniques cannot be easily translated to the patient's bedside. We propose a prototype device which demonstrates the easy use of biochip technology to perform this test: it contains a fluidic system, biochips (two to test the patient and two to test the red cell concentrates) and an optical absorbance detection module. When blood is applied to the biochips, red blood cells are trapped onto the surface if antigens and antibodies are complementary (positive chips). If they are not complementary, very little red blood cells are adsorbed (negative chips). Percentages of surface covered with red blood cells in negative biochips are  $2\% \pm 2$  (red cell concentrates) and  $1\% \pm 1$  (whole blood). This proves that the fluidic configuration leads to an optimum control of fluids flows with little retention of red blood cells in the circuitry. These percentages increase to  $96\% \pm 3$  and  $82\% \pm 8$  for red cell concentrates and whole blood respectively. This demonstrates a strong and specific immunocapture of red blood cells on positive chips. Furthermore, optical detection proves to be efficient at critical red blood cells concentrations (10<sup>8</sup> C/mL) and absorbance strongly correlates to the percentage of red blood cells captured by antibodies. [All rights reserved Elsevier]. (44 refs)

TREATMENT: Practical; Experimental

CONTROLLED INDEXING: surface plasmon resonance; optical sensors; lab-on-a-chip; biosensors; blood; cellular biophysics; microfluidics;

bioMEMS; biomedical measurement; medical control systems; flow control; patient treatment

UNCONTROLLED INDEXING: biochip technology; automated ABO blood type compatibility test; patient bedside; bedside pre-transfusion ABO blood

compatibility test; France; mandatory blood type compatibility test; blood transfusion accidents; fluidic system; red blood cell concentrates; antigens; antibodies; positive chips; negative chips; red blood cell adsorption; covered biochip surface percentage; fluidic configuration; optimum fluid flow control; whole blood; red blood cell immunocapture; optical detection; red blood cell concentration; absorbance; antibody red blood cell capture; lab-on-chip; SPR

immunosensor; surface plasmon resonance immunosensor

CLASSIFICATION: A8760F Optical and laser radiation (medical uses); A0710C Micromechanical and nanomechanical devices and

systems; A0760 Optical instruments and techniques; A4762 Flow control; A4785 Applied fluid mechanics; A4787 Microfluidics and nanofluidics; A8770E Patient diagnostic methods and instrumentation; A8780B Biosensors; B7510J Optical and laser radiation (biomedical imaging/measurement); B2575 MEMS and NEMS device technology; B7230J Biosensors; B7580 Biological engineering and techniques; C3385 Biological and medical control systems; C3120T

Level, flow and volume control; C7330 Biology and medical computing; C7420 Control engineering computing

IPC: A61B5/00

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- Research the publications of faculty members
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- Strategize on a global scale and harness the worlds scientific literature with ease from one reliable source



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- Track publications of competitors
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- Access state-of-the-art reviews via Inspec treatment codes
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- Solve technical problems
- Identify potential licensees
- Patent documents within Inspec

# **Inspec Archive** 1898 - 1968

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**Science Abstracts (1898 – 1902)** 

**Science Abstracts: A** – Physics Abstracts (1903 – 1968)

**Science Abstracts: B** — Electrical Engineering Abstracts (1903 — 1965) **Science Abstracts: B** — Electrical & Electronics Abstracts (1966 — 1968)

**Science Abstracts: C** - Control Abstracts (1966 - 1968)

#### **Features**

#### The Inspec Archive contains:

- over 873,700 indexed abstracts to journal articles, conference proceedings, books, reports and dissertations
- abstracts that are much longer than present day records and often contain diagrams and complex mathematical proofs
- tables, graphs and figures from the original source document in many of the earlier records
- the original indexing and classifications
- enhancements to the indexing in the form of current day
- Inspec Thesaurus terms and Classification codes

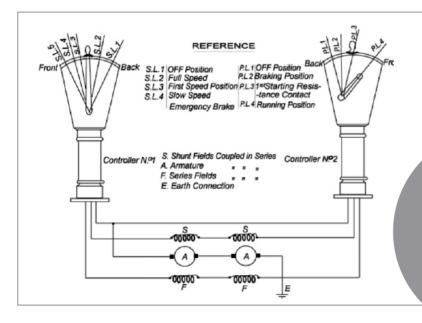
#### **Benefits**

The Inspec Archive makes it easy to locate references to historic research and engineering breakthroughs from thousands of scientists and engineers, including Nobel prize winners such as Marie Curie, Albert Einstein and Guglielmo Marconi. It also gives access to often forgotten works (sometimes known as 'Sleeping Beauties') that may be of use in assessing the validity of current patents. An idea suggested many years ago that was not developed then may be of relevance today.



We are extremely pleased with the level of detail and reporting analysis available in Inspec. This one source allows our researchers to analyse data and refine search strategies all within one easy to use research tool.

Paul Mendoza, Digital Library Coordinator, Mexican Institute of Petroleum, MX



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#### ■ Inspec Classification

The Inspec Classification shows the period of use of each code and, where appropriate, indicates codes that should be used when searching the Inspec database for references prior to that date. An index containing over 5,500 entries forms an integral part of the publication.

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Emily L. Poworoznek, Associate Professor/ Engineering & Physical Sciences Librarian, University of New Hampshire

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