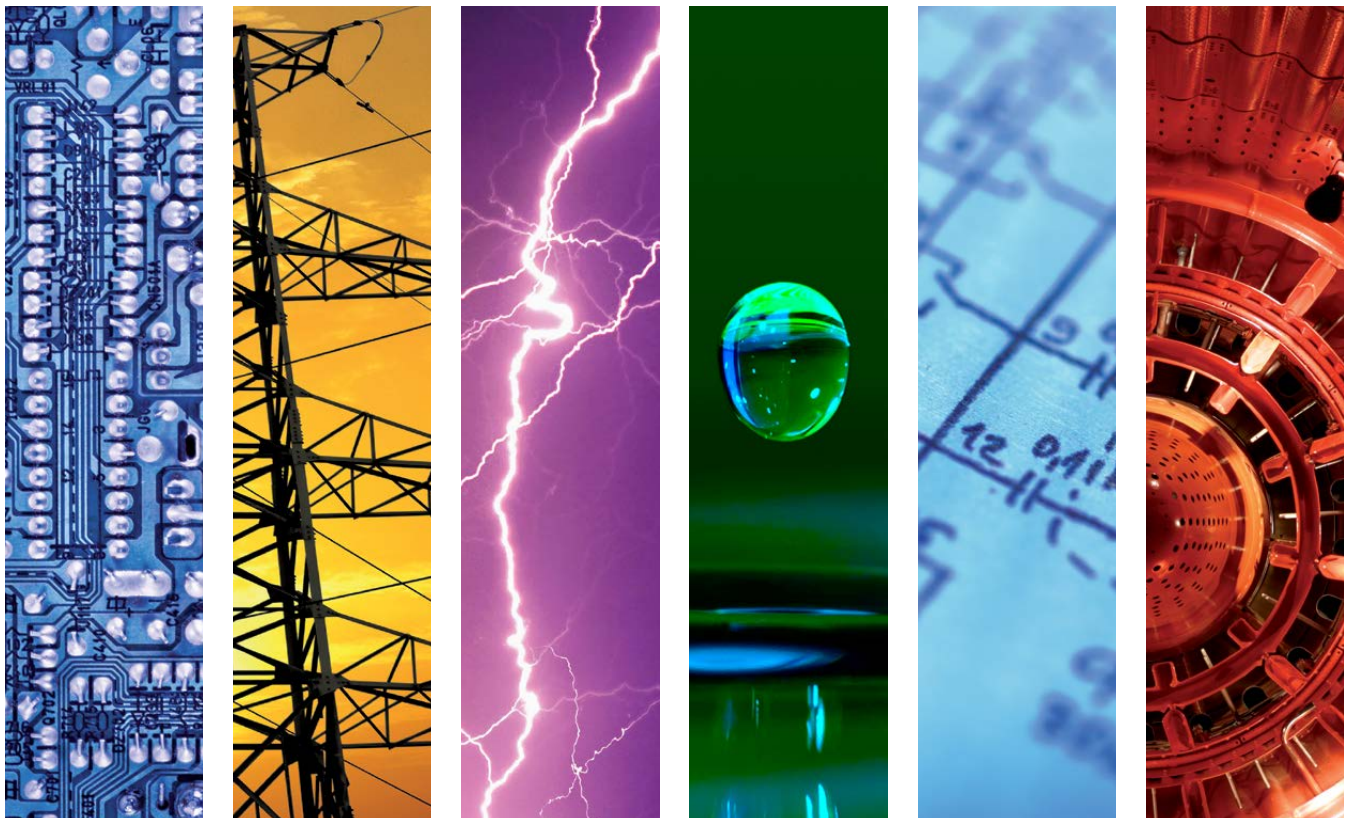




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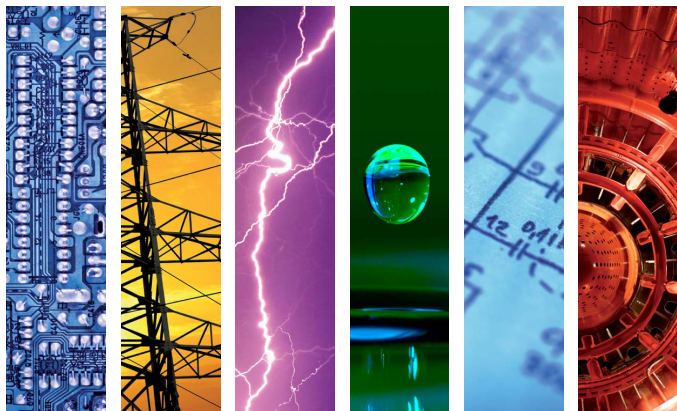


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Subject Coverage

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

- C00 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



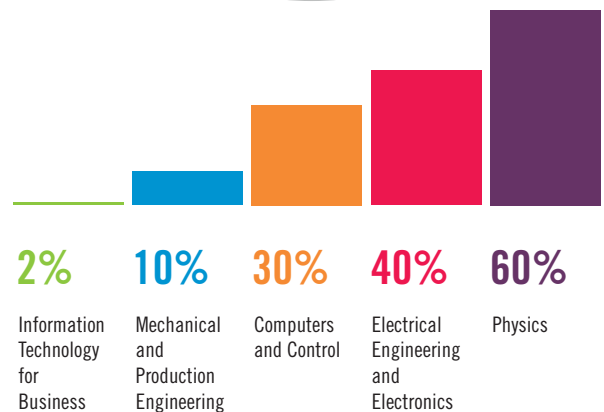
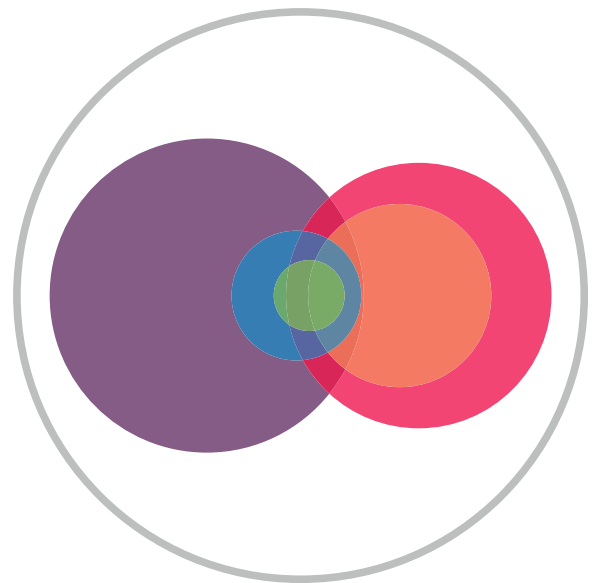
D - Information Technology for Business

- 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
- 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

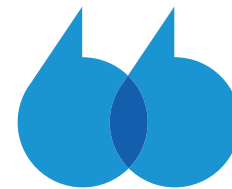
- artificial intelligence
- computer theory
- hardware
- software
- applications of computing
- optical computing
- neurocomputing
- computers themselves and their elements
- circuitry
- storage
- peripheral equipment
- networking
- application programs
- legal aspects of computing
- software engineering
- systems techniques
- systems analysis
- software metrics
- computing 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
- teleconferencing
- viewdata
- computer terminals
- communications
- word 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



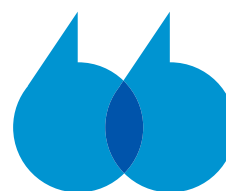
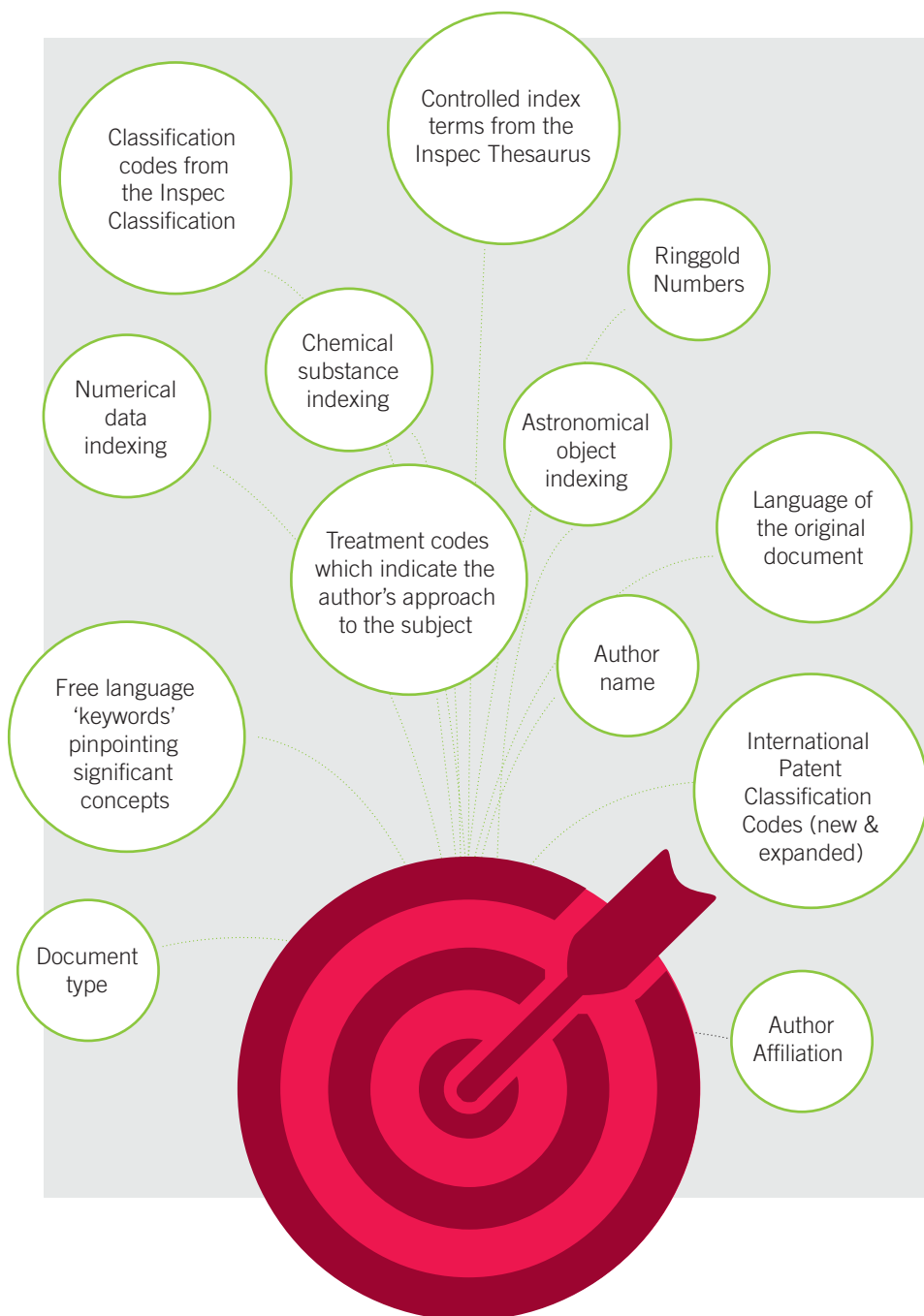
Database Records

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:



I have used Inspec for many years and have found the database to be beneficial. I get straight to the area of research, cutting out irrelevant information and saving time that can be spent on other project areas. I've not found any other database that produces the same high quality peer reviewed literature as Inspec.

Professor Wan Yuehua, Head of Reference Library Department, **Zhejiang University of Technology, China**



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): Charrière, 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):

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- 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^{8-9} 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

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- Patent documents within Inspec

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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)

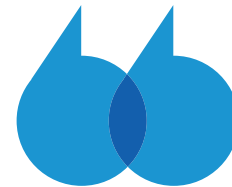
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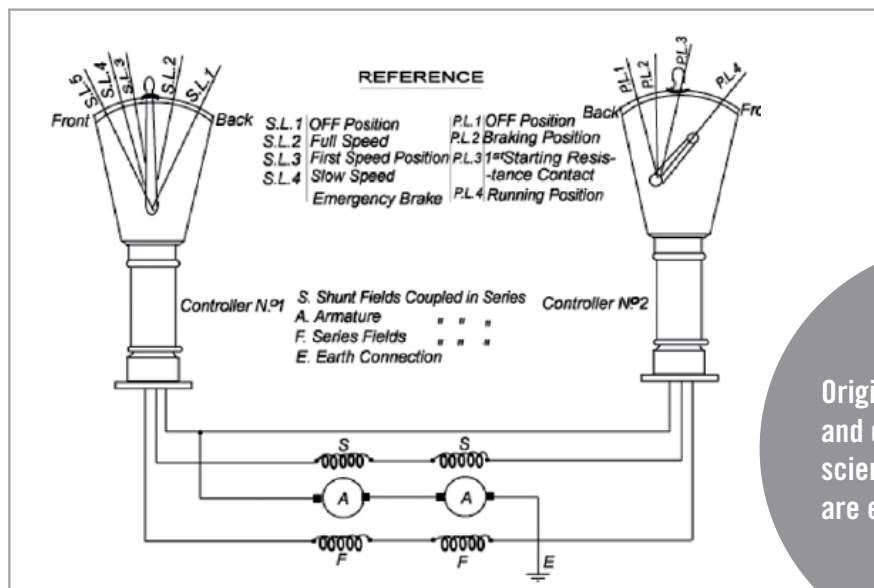
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We are extremely pleased with the level of detail and reporting analysis available in Inspec. This one source allows our researchers to analyse data and refine search strategies all within one easy to use research tool.

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



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Information can be located online at www.theiet.org/resources/inspec/products/aids

■ Inspec Thesaurus

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■ List of Journals

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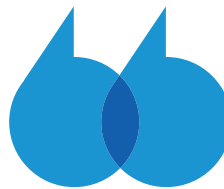
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Emily L. Poworoznek, Associate Professor/
Engineering & Physical Sciences Librarian,
University of New Hampshire



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