Inspec on EBSCO
August 2010

Richard Simms
Inspec Customer Relationship Manager
rsimms@theiet.org
Agenda

• The Institution of Engineering & Technology
  – Professional Networks & IET.TV
  – Inspec

• Inspec Database
  – Content, Structure & Coverage

• Inspec on EBSCO
  – Overview
  – Value-Added Indexes Searching
  – Bibliographic Searching

• Inspec Archive
The Institution of Engineering & Technology

• Formerly The Institution of Electrical Engineers (The IEE)
• Learned Society established 1871
• Largest professional engineering society in Europe with 150,000 members worldwide
• Primary Publisher journals, books, conference proceedings
• Secondary Publisher Inspec database
Other IET information for engineers includes the industry and technology specific Communities providing industry news, events, discussion lists and contacts, etc.
“TV Channels” exist in key technology areas.

Recordings can be played via either a) RealPlayer, or b) Windows Media Player.

FREE!!
The IET - Publishing

- Primary Publisher

Books
- e.g. Short Circuit Currents. Juergen Schlabbach

Journals
- e.g. Electronics Letters

Conference Proceedings
- IET Digital Library
  - www.ietdl.org
The IET - Publishing

- Secondary Publisher
  - Inspec Database
Content and coverage: Inspec

Content
Key resource for global, quality and comprehensive science and engineering information spanning 110 years for:

• Physics

• Electrical and electronic engineering

• Computing and control engineering

• Information technology

• Production, manufacturing & mechanical engineering

Plus many interdisciplinary subjects such as nanotechnology, oceanography, environmental science.....
Inspec Database Subjects

- **Physics**: 63%
- **Electrical Engineering**: 41%
- **Computing and Control**: 30%
- **Information Technology**: 1%
- **Manufacturing, Production & Mechanical Engineering**: 10%
Inspec Database

• Over 11.43 million records (August 2010)
  – 750,000 records to be added in 2010
  – Optional Archive adds a further 873699

• 1969 to date
  Or 1898 with the Archive

• Over 4000 journals, and 3000 other publications
  – Includes 140 Open Access Journals

• Full text linking via DOIs
  – Up to 60% of current records
Document Types

- Journal articles 70%
- Conference proceedings 20%
- Conference papers in Journals 9%
- Others 1%

Others include:
- Books/Book Chapters
- Reports
- Patents (1968/9-1976)
- Dissertations

Journals 70%
Conferences 29%
Others 1%
Physics
7.05 Million Records

A0 General
A1 Elementary Particles
A2 Nuclear Physics
A3 Atomic & Molecular
A4 Fundamental Physics
A5 Plasmas & Discharges
A6 Solid State, Non-electronic
A7 Solid State, Electronic
A8 Cross-disciplinary Physics
A9 Geophysics & Astronomy
Electrical & Electronic Engineering
4.71 Million Records
B0  General, Maths & Materials
B1  Circuits
B2  Components, Electron Devices
B3  Magnetic Devices & Materials
B4  Optoelectronics
B5  Electromagnetic Fields
B6  Communications
B7  Instruments & Applications
B8  Power Systems
Computing & Control
3.46 Million Records

C0 General Management
C1 Systems & Control Theory
C3 Control Technology
C4 Numerical & Computer Theory
C5 Computer Hardware
C6 Computer Software
C7 Computer Applications
Information Technology
106,353 Records

D1 General & Management
D2 Applications
D3 General Systems
D4 Office Automation/Communications
D5 Office Automation/Computing
Mechanical & Production Engineering
1.08 million Records

E0 General topics in Manufacturing & Production Engineering
E1 Manufacturing & Production
E2 Engineering Mechanics
E3 Industrial Sectors
Additional Subject

- Manufacturing & Production Engineering
  - Section E in the Inspec Classification
  - 600,000 records from 1969 reclassified with section E codes
  - Thesaurus terms from January 2004
  - Over 200 new sources
  - Approximately 40,000 to 60,000 records to be added annually

- Mechanical Engineering
  - New subject area from January 2005 forwards
Diverse Coverage

**laser printers**
Long-haul lasers [buyer's guide]

**traffic control**
Traffic signal control by Egograms

**radar**
Fully integrated automotive radar sensor with versatile resolution

**photography**
Color handling in panoramic photography

**pacemakers**
Paradoxical undersensing at a high sensitivity in dual chamber pacemakers

**radiation effects**
Modeling natural space ionizing radiation effects on external materials

**nanotechnology**
Molecular motors: nature's nanomachines

**environmental science**
Impact of science and technology on energy and environmental research and development

**computer games**
A principal cognitive precondition of successful child-computer interactions in the information society

**manufacturing**
Analysis of a decentralized production-inventory system

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The Institution of Engineering and Technology

www.theiet.org
Search Fields on Inspec

Subject Fields
- Title
- Abstract
- Subject Terms
  - Key Phrase Headings
  - Inspec Headings
- Classification Codes
- Treatment Type
- Chemical Indexing
- Numerical Indexing
- Astronomical Indexing

Bibliographic Fields
- Author
- Author Affiliation
- Publication Year
- Document Type
- Language
- Publication Country
- Source
- Conference Details
- Accession Number
- Coden/ISSN
- Digital Object Identifier

Added Value Fields!
Why Use Inspec

- Content selected by specialists
- Publication coverage
- Value add indexing
- Time period
- Easy to use interface
- Full text linking
- Save search and alerting features
The uses of Inspec

Scientific Research

- Pre-research background
  - state of the art, reviews
- Current awareness
- New product information
- Patent-related searching
  - prior art
  - potential licensees
  - infringers

Technological forecasting

Competitor intelligence
Inspection on Ebsco: Overview
Title: Development of SAW device biosensor for determination of volatile compounds

Author(s): Chang, S.M.; Suzuki, M.; Tamiya, E.; Kamb, T.

Author's Affiliation: Tokyo Univ., Japan


ISSN: 03869297 CODEN: DIIKRA

Place of Publication: Japan

Language: English

Abstract: Surface acoustic wave (SAW) resonators have been applied as chemical vapour sensors. The characteristics of an SAW resonator oscillator operating at 310 MHz coated with acetone, cholesterol, lecithin, and phosphatidyllethanolamine were analyzed. Amyl acetate, citral, beta-ionone, menthone, and other organic gases showed different affinity. The identification of odourants depending on the species of lipid used for coating is discussed in terms of the similarity of the normalized resonant frequency shift pattern.

Abstract Number(s): 93000750, 93002754

Inspection Heading(s): Biosensors; chemical analysis; crystal resonators; gas sensors; surface acoustic wave devices

Key Phrase Heading(s): Surface acoustic wave resonators; transducers; amyl acetate; odorants identification; SAW device biosensor; volatile compounds; chemical vapour sensors; SAW resonator oscillator; acetaldehyde; cholesterol; lecithin; phosphatidyl ethanolamine; citral; beta-ionone; menthone; organic gases; lipid; normalized resonant frequency shift pattern; 310 MHz

Classification: A6790 Biophysical instrumentation and techniques

A4350 Chemical analysis and related physical methods of analysis

A3950 Acoustical measurements and instrumentation

A1930 Sensing devices and transducers

A4301 Chemical variables measurement

A6780C Acoustic wave devices

A6760C Biomedical measurement and imaging

Treatment: Application; Practical; Experimental

Number of References: 19

Publication Type: Journal Paper

Entry Date: 2001/10/19

Accession Number: 33799590

Persistent link to this record: http://search.epnet.com/direct.asp?an=33799590&db=inh

Value-added indexing

Bibliographic details
EBSCOHOST Basic Search Screen
Search Screen with Results

The Institution of Engineering and Technology
Visual Search
Other Search Fields
Other Search Fields
Inspec on Ebsco

Inspec Added Value fields
Added Value Subject Fields
Added Value Subject Fields

- **Inspec Headings (Thesaurus Terms)** enable you to broaden your search in any ‘Inspec’ subject
- **Key phrase headings** improve your results – providing you with a more relevant set of records
- **Classification Codes** are useful for navigating your search to broad research areas or for repeated search of very specific narrow topics (e.g. for alerts)
- **Treatment Codes** refine your search by the type of research you are interested in
- **Numerical, Chemical and Astronomical data** can be searched when these are significant to your search
Added-Value Subject Fields

- Inspec Headings
- Key Phrase Headings
- Classification
- Treatment Codes
- Numerical Data
- Chemical Data
- Astronomical Object Data
Inspec Headings

Abstract: The generation and detection of coherent acoustic phonons in GaAs/AlAs superlattices grown on the low-symmetry, (311) and (211), planes of GaAs using femtosecond time-resolved pump-probe measurements is described. Frequencies of the excited phonons are deduced from the oscillations in the surface reflectivity of the probe and are compared with theoretical calculations assuming that Raman scattering is responsible for coherent phonon generation. The measured frequencies and relative intensities of the modes agree well with the theoretically predicted folded bulk acoustic modes and are determined by the period and symmetry of the superlattices.

Inspec Headings: aluminium compounds; gallium arsenide; high-speed optical techniques; III-V semiconductors; phonons; Raman spectra; semiconductor superlattices

Key Phrase Headings: phonon excitation; high-frequency coherent acoustic phonons; low-symmetry superlattices; femtosecond time-resolved pump-probe measurements; oscillations; surface reflectivity; Raman scattering; GaAs-AlAs

Classification: A6322 Phonons in low-dimensional structures and small particles
A7847 Ultrafast optical measurements in condensed matter
A7830G Infrared and Raman spectra in inorganic crystals

Treatment: Experimental

Chemicals: GaAs-AlAs/int AlAs/int GaAs/int Al/Int As/int Ga/int AlAs/bin GaAs/bin Al/bin As/bin Ga/bin

Number of References: 9
Inspec Headings

- Key Words and Phrases from the Inspec Thesaurus
- Standardized Spelling, Punctuation, Terminology
- Reflect the most important concepts in Title and Abstract

Benefits

- Overcome problems with free language
- Increase search precision
- Allow you to broaden your search
- Allow you to explore any subject of your interest within the Inspec subject areas
Using Inspec Headings

Search Example: robot

Display several records and browse Inspec Headings:

Inspec Headings: case-based reasoning, multi-agent systems, planning (artificial intelligence), problem solving, real-time systems

Repeat the search using Inspec Headings
Thesaurus Terms

Browsing: Inspc -- Subject Terms

Select term, then add to search using: or Add

- planning
- artificial intelligence

Related Terms
- planning
- artificial intelligence
- knowledge based systems
- expert systems
- temporal reasoning
- spatial reasoning

Related Class. Codes
- C1178
- C1750

The Institution of Engineering and Technology
Inspec Thesaurus

- Authority List for Controlled Terms
- Hierarchically Structured
- Availability: Online, print or XML

2010 edition contains 18,399 terms:
  - 9,573 preferred terms
  - 8,826 synonyms
Added-Value Subject Fields

- Inspec Headings
- **Key Phrase Headings**
- Classification
- Treatment Codes
- Numerical Data
- Chemical Data
- Astronomical Object Data
## Key Phrase Headings

<table>
<thead>
<tr>
<th>Title</th>
<th>High-energy ion emission from deuterium clusters by using an intense femtosecond laser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authors</td>
<td>Sungmo Nam 1; Jaemin Han 1; Yong Joo Rhee 1; Yong-Ho Cha 1; Duck-Hee Kwong 1; Yong Won Lee 1; Jung Ho Mun 1; Sungman Lee 1; Sungok Kwong 1; Hyungki Cha 1</td>
</tr>
<tr>
<td>Author's Affiliation</td>
<td>1Lab. for Quantum Opt., Korea Atomic Energy Res. Inst., Daejeon South Korea</td>
</tr>
<tr>
<td>Source</td>
<td>Journal of the Korean Physical Society April 2008, vol.32, no.4, pp. 1020-5. ISSN:0374-4884 (print), CODEBV/KPS)AS Publisher: Korean Physical Society Country of Publication: South Korea</td>
</tr>
<tr>
<td>Language</td>
<td>English</td>
</tr>
<tr>
<td>Abstract</td>
<td>The interaction of a femtosecond laser pulse with deuterium clusters was experimentally studied. The prepulse and the amplified spontaneous emission (ASE) effects on laser absorption and ion emission were measured with the ASE time width controlled. We also measured the spatial distribution of ions along the plasma channel produced from laser interaction with clusters. We performed an experiment to generate neutrons by using laser-induced nuclear fusion, d(d,n) 3He. A 10-TW femtosecond laser beam (280 mJ, 30 fs) was focused onto deuterium gas clusters and produced ions accelerated by Coulomb explosion, which resulted in a neutron yield of $3 \times 10^3$/shot.</td>
</tr>
<tr>
<td>Inspec Keywords</td>
<td>deuterium; plasmalight propagation; plasma production by laser; superradiance</td>
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<tr>
<td>Key Phrase Headings</td>
<td>high-energy ion emission; deuterium gas clusters; intense femtosecond laser; amplified spontaneous emission; laser absorption; plasma channel; laser-induced nuclear fusion; Coulomb explosion; neutron yield; power: 10 TW; energy: 280 mJ; time: 30 fs; D</td>
</tr>
</tbody>
</table>

### Classification
- A52501 Plasma production and heating by laser beams
- A5255P Emission, absorption, and scattering of radiation in plasma
- A5240D Electromagnetic wave propagation in plasma
Key Phrase Headings

Keywords and Phrases from:
- Title, Abstract, Full text, Indexers’ expertise
- Reflect the most important concepts in the document

Key Phrase Headings:
- gas-phase carbon dioxide emission
- shock activity
- star-forming region
- spectral line mapping
- V sub 2
- bending and infrared Spectrograph
- Spitzer Space Telescope
- radiative pumping
- HH2 protostellar region
- interstellar molecules
- diffuse interstellar absorption feature
- IR continuum emission
- grain heating: 50 to 200 K; 14.98 micron; 15 micron; 15.20 micron; V sub 2

What are they?

Benefits
- Cover all significant concepts
- Additional information from full text
- Include topics not yet in Thesaurus
- E.g.: new concepts, product or company names, geographical terms, synonyms, trade and chemical names
- Overcome non standardized spelling and terminology
- Eliminate negative concepts
Example

Problems: Variations in spelling, acronyms and abbreviations
# Spelling

<table>
<thead>
<tr>
<th>colour</th>
<th>color</th>
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</thead>
<tbody>
<tr>
<td>defence</td>
<td>defense</td>
</tr>
<tr>
<td>atomisation</td>
<td>atomization</td>
</tr>
<tr>
<td>aluminium</td>
<td>aluminum</td>
</tr>
<tr>
<td>fibre</td>
<td>fiber</td>
</tr>
<tr>
<td>catalogue</td>
<td>catalog</td>
</tr>
<tr>
<td>sulphur</td>
<td>sulfur</td>
</tr>
<tr>
<td>modeling</td>
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</tr>
<tr>
<td>haemodynamics</td>
<td>hemodynamics</td>
</tr>
<tr>
<td>disc</td>
<td>disk</td>
</tr>
<tr>
<td>programme</td>
<td>program</td>
</tr>
<tr>
<td>grey</td>
<td>gray</td>
</tr>
</tbody>
</table>
## Acronyms & Terminology

- Thousands of acronyms are used, e.g. 
  - RAM, NVRAM, DRAM, SRAM (RAM variations)

- One acronym is often used for more subjects
  - PC (microcomputers or printed circuits or programmable controllers)
  - FEA (finite element analysis or field emitter arrays)

- There are often several terms for one topic
  - PC, desk-top computer, microcomputer
  - Internal combustion engines, diesel engines, IC engines, petrol engines
Added-Value Subject Fields

- Inspec Headings
- Key Phrase Headings
- **Classification**
- Treatment Codes
- Numerical Data
- Chemical Data
- Astronomical Object Data
Inspec Classification

<table>
<thead>
<tr>
<th>Abstract</th>
<th>The generation and detection of coherent acoustic phonons in GaAs/AlAs superlattices grown on the low-symmetry, (311) and (211), planes of GaAs using femtosecond time-resolved pump-probe measurements is described. Frequencies of the excited phonons are deduced from the oscillations in the surface reflectivity of the probe and are compared with theoretical calculations assuming that Raman scattering is responsible for coherent phonon generation. The measured frequencies and relative intensities of the modes agree well with the theoretically predicted folded bulk acoustic modes and are determined by the period and symmetry of the superlattices.</th>
</tr>
</thead>
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<td>aluminium compounds; gallium arsenide; high-speed optical techniques; III-V semiconductors; phonons; Raman spectra; semiconductor superlattices</td>
</tr>
<tr>
<td>Key Phrase Headings</td>
<td>phonon excitation; high-frequency coherent acoustic phonons; low-symmetry superlattices; femtosecond time-resolved pump-probe measurements; oscillations; surface reflectivity; Raman scattering; GaAs-AlAs</td>
</tr>
<tr>
<td>Classification</td>
<td>A6322 Phonons in low-dimensional structures and small particles</td>
</tr>
<tr>
<td></td>
<td>A7847 Ultrafast optical measurements in condensed matter</td>
</tr>
<tr>
<td></td>
<td>A7830G Infrared and Raman spectra in inorganic crystals</td>
</tr>
<tr>
<td>Treatment</td>
<td>Experimental</td>
</tr>
<tr>
<td>Chemicals</td>
<td>GaAs-AlAs/int AlAs/int GaAs/int Al/int As/int Ga/int AlAs/bin GaAs/bin Al/bin As/bin Ga/bin</td>
</tr>
<tr>
<td>Number of References</td>
<td>9</td>
</tr>
</tbody>
</table>
Inspec Classification

A - Physics
B - Electrical & Electronics
C - Computers & Control
D - Information Technology for Business
E - Manufacturing, Production & Mechanical Engineering

Classification:
- A6322 Phonons in low-dimensional structures and small particles
- A7847 Ultrafast optical measurements in condensed matter
- A7830G Infrared and Raman spectra in inorganic crystals
Inspec Classification

Sector Code Level
Electrical & Electronics

First Level
Instrumentation & special applications

Second Level
Medical physics & biomedical engineering

Third Level
Biomedical measurement & imaging

Fourth Level
Biomedical MRI & spectroscopy

B 7 5 10 N
## Classification Structure

<table>
<thead>
<tr>
<th>Search ID#</th>
<th>Search Terms</th>
<th>Search Options</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>S6</td>
<td>CC b7510n</td>
<td>Search modes - Boolean/Phrase</td>
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<td></td>
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<td>S5</td>
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<td>(224607)</td>
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<td>S1</td>
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<tr>
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<td></td>
<td>(4612426)</td>
</tr>
</tbody>
</table>

- **Increasing Specificity**
- **Decreasing results**

The Institution of Engineering and Technology (IET) - Collective Inspiration

www.theiet.org
Classification Search Example

**Search Topic**: Algol – Software (C6 section)

Algol – Variable Star (A9 section)
Classification Search Tips

- **Broad Classification Codes**, e.g. C61 are useful particularly for setting context (e.g. when searching terms with multiple meanings (Algol, SDI…))

- **Narrow Classification Codes**, e.g. b7230G are useful particularly when searching repeatedly specific subjects (e.g. in alerts)
Added-Value Subject Fields

- Inspec Headings
- Key Phrase Headings
- Classification
- **Treatment Codes**
- Numerical Data
- Chemical Data
- Astronomical Object Data
# Treatment Codes

<table>
<thead>
<tr>
<th>Title:</th>
<th>Creating automated plans for semantic Web applications through planning as model checking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authors:</td>
<td>Anderson, B.B.; Hansen, J.W.; Lowry, P.B.</td>
</tr>
<tr>
<td>Author’s Affiliation:</td>
<td>1Inf. Syst. Dept., Brigham Young Univ., Provo, UT USA</td>
</tr>
<tr>
<td>Language:</td>
<td>English</td>
</tr>
<tr>
<td>Abstract:</td>
<td>The uncertainties of planning engendered by nondeterminism and partial observability have led to a melding of model checking and artificial intelligence. The result is planning as model checking. Because planning as model checking tests sets of states and sets of transitions at once, rather than single states, the method remains robust and viable in domains of large state spaces and varying levels of uncertainty. We develop a test bench for semantic Web agents and use model-based planning to derive strong plans, strong cyclic plans, and weak plans. Our results suggest potential robustness and efficacy in devising plans for agent actions in the Semantic Web environment.</td>
</tr>
<tr>
<td>Inspec Headings:</td>
<td>formal verification; planning (artificial intelligence); semantic Web; software agents; uncertainty handling</td>
</tr>
<tr>
<td>Key Phrase Headings:</td>
<td>automated plan; semantic Web agent; model checking; artificial intelligence; model-based planning; uncertainty; strong cyclic plan; weak plan</td>
</tr>
<tr>
<td>Classification:</td>
<td>C7210 Information networks</td>
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<tr>
<td>Treatment:</td>
<td>Practical</td>
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<tr>
<td>Number of References:</td>
<td>31</td>
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<td>Publication Type:</td>
<td>Journal Paper</td>
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<tr>
<td>Document Numbers:</td>
<td>S0957-4174(09)00210-3</td>
</tr>
</tbody>
</table>
9 types of treatment codes:

- Applications
- Bibliography
- Economic
- Experimental
- General or review
- New developments
- Practical
- Product Review
- Theoretical or Mathematical

- Reflect the authors approach to the topic
- Multiple treatment codes are often assigned
- Treatment codes are subjective, use at the end of the search
Treatment Codes - example

Search Topic: Multimedia
1. Bibliography
2. Experimental
3. Application
Added-Value Subject Fields

- Inspec Headings
- Key Phrase Headings
- Classification
- Treatment Codes
- Numerical Data
- Chemical Data
- Astronomical Object Data
**Title:** Preparation and characterization of polypyrrole films for three-dimensional micro supercapacitor

**Authors:** Wei Sun1, Xuyuan Chen1

**Author’s Affiliation:** Inst. for Microsys. Technol., Vestfold Univ. Coll., Tonsberg Norway

**Source:** Journal of Power Sources 5 Sept. 2009, vol.193, no.2, pp. 924-9, ISSN: 0378-7753 (print), CODEN: JPSOIZ Publisher: Elsevier Sequoia S.A. Country of Publication: Switzerland

**Language:** English

**Abstract:** As electro-active electrodes for supercapacitors, micro polypyrrole (PPy) films doping with ClO4- (PPyClO4) and Cl- (PPyCl) are prepared on Ni layers modified three-dimensional (3D) structures in Si substrates. The key process to fabricate the 3D structures is high-aspect-ratio deep reactive ion etching, which result in significant increase of available surface area. Homogeneous conformal Ni layers and PPy films are deposited on the 3D structures by electroless plating and electropolymerization, respectively. The supercapacitor properties of PPy films are investigated by using cyclic voltammetry (CV), electrochemical impedance spectroscopy (EIS) and galvanostatic charge/discharge with three-electrode system in NaCl solution. It is shown that doping with ClO4- results in ideal supercapacitor behaviors with rectangle-like CV shapes at scan rates from 5 to 200 mV s⁻¹, linear galvanostatic charge/discharge curves at current leads from 0.5 to 2 mA and stable cyclic property. However, doping with Cl- gives rise to non-ideal properties of supercapacitor. SEM of the PPyClO4 shows that the surface of the PPyClO4 electrode is smooth and the thickness of the PPyClO4 film is about 2.5 μm. The geometric capacitance of PPyClO4 is calculated as 0.030 F cm⁻² from CV at scan rate of 100 mV s⁻¹, 0.023 F cm⁻² from EIS and 0.027 F cm⁻² from galvanostatic discharge at 1 mA cm⁻² current density. [All rights reserved Elsevier].

**Inspec Headings:** chlorine compounds; electrochemical impedance spectroscopy; electrolytes; elemental semiconductors; films; materials preparation; nickel; scanning electron microscopy; silicon; sputter etching; substrates; supercapacitors

**Key Phrase Headings:** polypyrrole film; three-dimensional microsupercapacitor; electroactive electrode; modified three-dimensional structure; aspect-ratio deep reactive ion etching; electropolymerization; electroless plating; cyclic voltammetry; electrochemical impedance spectroscopy; linear galvanostatic charge-discharge curve; SEM; scanning electron microscopy; current density; current; 0.5 mA to 2 mA; size; 2.5 μm; ClO4-; Si

**Classification:** 88470 Other energy storage

**Treatment:** Practical; Experimental

**Numerical Data:** current 5.0E-04 to 2.0E-03 A; size 2.5E-06 m (halo)
Numerical Indexing

- Applied to records from 1987
- Controlled indexing for numerical data

- Variations in quantities
  - *velocity, speed* standardised to *velocity*

- Variations in units
  - *C, Celsius, °C, K, Kelvin, F* standardised to *K*

- Variations in values
  - *27,500 kW  27.5 MW 2.75 E07 W* standardised to *2.75 E07*

For the Thesaurus and Standardization, refer to: [http://www.theiet.org/publishing/inspec/about/records/numerical/](http://www.theiet.org/publishing/inspec/about/records/numerical/)
Search topic: temperature of 100 °C

From Numerical Thesaurus

Quantity: Temperature
Value: 3.73E+02
Unit: K

Exponential (Floating) notation (Explained in the Thesaurus)
Numerical Search Examples (1)

Key Phrase Heading(s): temperature characteristics, compressive strain, output power, slope efficiency, CW operation, GaInAs/GaAs QW VCSEL, threshold current density, highly strained semiconductor laser, monolithic growth, GaAs substrate, low-pressure metalorganic vapor phase epitaxy; 1.16 microm; 3 mA; 2 mW; 20 to 85 degC; Ga/sub 0.64/In/sub 0.36/As-GaAs.

Numerical Data: wavelength 1.16E-06 m; current 3.0E-03 A; power 2.0E-03 W; temperature 2.93E+02 n3 3.58E+02

- wavelength 1.16 µm      ni wavelength 1.16E-06
- current 3mA           ni current 3.0E-03
- power 2mW            ni power 2.0E-03.
- temperature 20 to 85°C ni temperature 2.93E+02 n3 3.58E+02

Exponential Notation

- Notation Especially Helpful for Very Large and Very Small Numbers:

  \[
  1,952,000,000,000 = 1.952E+12 \\
  0.000000000753 = 7.53E-10
  \]

This Help link will lead you to www.theiet.org
### Numerical Search Examples (2)

**Basic Index Searches**

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<th>Search Terms</th>
<th>Search Options</th>
<th>Actions</th>
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Added-Value Subject Fields

- Inspec Headings
- Key Phrase Headings
- Classification
- Treatment Codes
- Numerical Data
- Chemical Data
- Astronomical Object Data
Chemical Indexing
Chemical Indexing

- Applied to records from 1987
- Controlled indexing for inorganic chemical compounds & material systems
- Solves searching problems:
  - Non stoichiometry, e.g. Ga$_{1-x}$Al$_x$As
  - Case insensitivity, e.g. CO or Co, GaP or gap
  - Common words, different meanings

Inspec documentation is available on: [http://www.theiet.org/publishing/inspec/about/records/chemical/](http://www.theiet.org/publishing/inspec/about/records/chemical/)
Chemical Indexing

Basic roles
- el: element
- bin: binary system
- ss: 3 or more components

Additional roles
- dop: dopant
- int: interface
- sur: surface/substrate
- ads: adsorbate

Examples
- Co/el
- CO/bin C/bin O/bin
- V2O3/bin V2/bin O3/bin V/bin O/bin
- H2SO4/ss H2/ss SO4/ss H/ss S/ss O4/ss O/ss
Chemical Search Format

- Search format:
  - substance (adjacent) role
  - proximity operator
  - substance (adjacent) role ....

- Examples:
  - $\text{H}_2\text{SO}_4$ ci h2so4/ss
  - He-Ne ci he/bin n3 ne/bin
  - GaAlAs ci ga/int n5 al/int n5 as/int
Added-Value Subject Fields

- Inspec Headings
- Key Phrase Headings
- Classification
- Treatment Codes
- Numerical Data
- Chemical Data
- **Astronomical Object Data**
Mid-infrared observations of young stellar objects in the vicinity of ο Orionis


Authors: Oliveira, J.M. & van Loon, J.T.

Author's Affiliation: 1Dept. of Chem. & Phys., U.K.

Language: English

Abstract: We present new mid-infrared observations of objects in the vicinity of the O-star ο Orionis, obtained with TIMME-II at ESO. By constraining their near and mid-infrared spectral energy distributions, we established the nature of previously known IRAS sources and identified new mid-infrared sources as young stellar objects with circumstellar disks, likely massive members of the ο Orionis Cluster. For two of these objects we have obtained spectroscopy in the 6-13 μm range in order to investigate the chemistry of the dust grains. ΤX ο Ori exhibits a typical silicate emission feature at 10 μm, with a feature at about 11.2 μm that we identify as due to crystalline olivine. The IRAS 05356-0238 spectrum is very unusual, with a weak silicate feature and structure in the range 10-12 μm that may be explained as due to self-absorption forsterite. We also provide the first evidence for the presence of circumstellar disks in the jet sources Haro 5-39, HH 447, V510, ΤX ο Ori, HH 444 and V603 ΤX ο Ori, HH 445. Abstract Numbers: No.2005-05-0120-010

Inspect Headings: astrophysical systems: circumstellar matter: infrared sources (astromical): pre-main-sequence stars: star clusters: stellar radiation: stellar spectra


Classification: A97200 Pre-mainsequence stars
A97250 Other types of variable and peculiar stars
A97710 Cosmic IR sources
A97715 Circumstellar shells and expanding envelopes
A97719 Stellar radiation and spectra
A958800 Infrared astronomical observations

Treatment: Experimental

Numerical Data: wavelength 6.06-06 to 13.645 μm (IRAS)

Astronomical Objects: o ΤX ο Ori, RX J0535-0242, IRAS 05356-0238, TX ΤX ο Ori, Haro 5-39, Haro 5-26, V510 ΤX ο Ori, V603 ΤX ο Ori, HH 447, HH 444, HH 445 (Haro)

Number of References: 42

Publication Type: Journal Paper

www.theiet.org
Astronomical Object Data

- Applied to records from 1995
  - Uniquely identify millions of stars, nebulae & galaxies

- Types of objects covered:
  - Objects in constellations
  - Objects in catalogues
  - Galaxies in the Local Group
  - Objects with only positions

Astronomical catalogue Designations available on:
http://www.theiet.org/publishing/inspec/about/records/astronomical/
Inspec on Ebsco

Bibliographic searching
Bibliographic Indexes

Select a Field (optional)
- TX All Text
- AN Accession Number
- AB Abstract
- AZ Abstract Number
- AI Astronomical Object
- AU Author
- AF Author Affiliation
- CI Chemicals
- CC Classification Code
- CT Classification Code Title
- CO CODEN
- CN Conference Information
- CM Contract Number
- CY Country of Publication
- DI Digital Object Identifier
- DN Document Number
- IP Issue
- IB ISBN
- IS ISSN
- SH Inspec Headings
- KW Key Phrase Headings
- LA Language
- SO Source

Select a Field (optional)
- SP Start Page
- SU All Subject Headings
- CA Organizations
- NR Number of References
- NI Numerical Data
- PI Patent Information
- PA Patent Assignee
- DT Publication Date
- OD Publication Date of Non Abstracted Source
- PT Publication Type
- PB Publisher Information
- RN Report Number
- RD Revision Date
- IC SICI
- DP Submission Date
- TI Title
- TR Treatment (Phrase)
- VI Volume
- UC Update Code
- YR Year Of Publication
Bibliographic Indexes
Author (AU)

- All are included
- Format standardized to:
  - family name initial(s)

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Author - Index

• Search topic: Kent, A.J

Record display:

Title: Growth of \( \text{Sn} \) epitaxial films by plasma-assisted molecular beam epitaxy

Authors: Hall, J.L.; Moram, M.A.; Sanchez, A.; Novikov, S.V.; Kent, A.J.; Foxon, C.T.; Humphreys, C.J.; Campion, R.P.

Author's Affiliation: 1Sch. of Phys. & Astron., Univ. of Nottingham, Nottingham UK; 2Dept. of Mater. Sci. & Metall., Univ. of Cambridge, Cambridge UK
Author Affiliation (AF)

- Affiliation is given for the first named author only as it appears on the original document.
- Abbreviations are used (e.g., Co., Inc. Corp., Univ.)
- Includes city, state, and country of institution (country name is standardized throughout).
- Field browsable in Advanced Search.
## Author Affiliation - *Index*

King Abdul Aziz City of Science and Technology

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Competitive Intelligence

- Use Faceted Browsing to identify how many literature articles are:
  - published per year for an organisation
  - in which topics
  - by which authors (are there any experts? Could they be headhunted?)

E.g. for the author affiliation Samsung in the area of LED displays
### Language (LA) - Index

- **46 languages available** *(Chinese, Russian, Japanese, Bulgarian,…)*
- In Advanced Search, any language or combination language can be searched
- Also available in the limiters in the Advanced Search
• 9 different types of publication
• Also available in Advanced search via the limiters and in the search fields
Publication Type – Search example

Search topic:

- 3G mobile communication
- Find Journal & Conference articles

Search History/Alerts

<table>
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<th>Search Terms</th>
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<tr>
<td>S1</td>
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Limits - Publication Type: Journal Paper
Search modes - Boolean/Phrase

Results: 1-10 of 3226 Page: 1

1. A compact triple-band antenna design for UMTS, WLAN and WIMAX applications
   By: Jih-Fang Huang; Ling-Tzen Wu; Jih-Yu Wen
   (AN: 10757723)

2. Multiband notebook computer antenna design by FDTD method for GSM/WCDMA system applications
   By: Jih-Fang Huang; Jih-Yu Wen; Sheng-Chih Lin
   (AN: 10757724)
Use Publication Type Conference Proceedings to identify the conference rather than the individual papers in the Advanced Search Limiters.
Conference - Search example 1

Search topic:

- Conference on neural nets
- Held in Italy between 1999 and 2001
Conference - Search example 2

Search Topic:

- Conference meetings on the topic of ‘induction motors’
- Sponsored by IET
Patents

- 20,586 bibliographic records with abstracts
- 1968 to 1976 only
- US and UK basics and equivalents only
- Selection policy
  - Lost in the mists of time!
- Benefit
  - May pre-date and give searchable abstracts for earlier patents than other databases e.g. DWPI, US PTO
  - May include original (non-English language) filing details
Sample Patent Record

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<tr>
<th>Original title</th>
<th>Force commutation static frequency changer apparatus using direct current chopper technique</th>
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<tr>
<td>Authors</td>
<td>Stacey, E.J.</td>
</tr>
<tr>
<td>Patent Assignee</td>
<td>Westinghouse Electric Corp</td>
</tr>
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<td>Language</td>
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<td>An AC to AC static frequency changer apparatus having first and second terminals for developing a polyphase AC output voltage of a predetermined frequency at one of the first and second terminals from a polyphase AC input voltage of a given frequency applied at the other of the first and second terminals, a plurality of unilateral main switching means is cyclically and temporarily controlled for conduction, the main switching means being associated in pairs with the respective phases of the input terminals, and a DC voltage source. DC chopper means coupled between the DC voltage source and the plurality of main switches, includes cyclically controlled unilateral auxiliary switching means. Abstract Numbers: B10J76-031338</td>
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<td>B1211 Power electronics, supply and supervisory circuits</td>
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Value-added indexing

Patent number & info
Inspec Archive
Inspec Archive

- Electronic access to the printed Science Abstracts journals
  - Complements Inspec database
  - Covers 1898 to 1968
  - Contains over 873,700 records
  - Locate references to
    - Fundamental teaching
    - Sleeping beauties
  - Include some tables, graphs, figures
  - Modern indexing, classification and Thesaurus terms
Inspec Archive

- Fully searchable, electronic access to >70 years of international & technical literature
  - easier access to information from 1898->

- Elimination of the need to keep aging print volumes
  - 176 print volumes & >140,000 pages
  - Saves on:
    - storage costs
    - your time
    - library shelving space
Inspec Archive – *Science Abstracts*

**What are Science Abstracts?**

- **Multidisciplinary Database**
  - Physics and Electrical & Electronic Engineering from 1898 in one Science Abstracts journal
  - Physics from 1902
  - Electrical & Electronics Engineering from 1902
  - Computing & Control Engineering from 1966
  - Wide range of cross-disciplinary topics
Inspec Archive - Content

- All information from the Science Abstracts Journals in electronic format
- Information easily accessible to the user and easily searchable
- Records of all the principle European and American papers
- Journals, conferences, reports, books and dissertations
- Records of publications by all the eminent scientists and engineers (1898–1968)
Inspec Archive - Content

- Easily searchable Bibliographic and Subject fields
- High-quality English-language records
- Original indexing and classifications plus modern indexing for improved search facility
- Original title and entire abstract
- Often includes tables, graphs and diagrams from the original abstract
- Includes discussion notes from conferences and meetings
Inspec Archive – Record content

- References to related papers in record
  - Allow the user to click through to the record of the associated document

- Documents in the Archive include:
  - Conference proceedings
  - Books
  - Journals
  - Reports
  - Dissertations

- Digital Object Identifier (DOI) link
  - Direct access to the full text document
Customer Support

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  - Fax number: +44 (0)1438 767339
  - E-mail: inspec@theiet.org

- **In-House Training Seminars**
- **Inspec Documentation**
- **Inspec Website**