



COMPENDEX ファイル

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JAICI

化学情報協会

〒113-0021 東京都文京区本駒込6-25-4 中居ビル

サービス全般 TEL: 0120-151-462

E-mail: customer@jaici.or.jp

ヘルプデスク TEL: 0120-003-462

E-mail: support@jaici.or.jp

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COMPENDEX ファイル

ファイル概要

- COMPENDEX ファイルは、世界中の工学および科学技術に関する雑誌論文および会議録を収録するデータベースである。

・ ファイル概要

(2011 年 8 月)

| | |
|--------|---|
| 製作者 | Elsevier B.V. |
| 収録源 | <ul style="list-style-type: none"> - 雑誌 4,500 誌 (全体の約 63%) - 年間約 2,000 の会議の会議発表論文 (全体の 25%) - レポート <ul style="list-style-type: none"> - 単行本 - その他の不定期刊行物 |
| 収録分野 | <ul style="list-style-type: none"> - 機械工学 - 電気工学 - エレクトロニクス - 制御工学 - コンピュータ - 物理学 など |
| 収録内容 | 書誌情報, 索引語, 抄録, (元素記号) |
| レコード構成 | 文献単位 |
| 収録件数 | 約 1,081 万件 |
| 収録期間 | 1969 年～ |
| 更新頻度 | 毎週 |
| アラート | 毎週 |
| 特長 | <ul style="list-style-type: none"> ・ COMPuterized ENgineering InDEX と EI Engineering Meetingsdatabase とを合わせた、工学と技術に関する世界中の文献を収録する網羅的な文献データベースである。 ・ 抄録付きのレコードは、英語で書かれている。 ・ レコードの約 10%については標題が英語以外のものもあるが、原標題と英訳標題の両方を利用できる。 ・ COMPENDEX では、英語版と独-英語版の 2 つのシソーラスを利用できる。Engineering Index シソーラス (英語版) は、/CT (統制語) フィールドで利用でき、Engineering Index シソーラス (独-英語版) は、/CTDE (統制語-独語) フィールドで利用できる。 |
| 利用料金 | <ul style="list-style-type: none"> ・ 接続時間料 (1 時間あたり) : 16,700 円 ・ オンライン・ディスプレイ料金 (回答 1 件当たり) <ul style="list-style-type: none"> - BIB 表示形式 (デフォルト) : 398 円 - ALL 表示形式 : 398 円 - SCAN, TRIAL, FREE, IND, AB 表示形式 : 無料 |

COMPENDEX ファイル

レコード例と表示形式

■ 雑誌レコード例 (ALL 表示形式)

| | | | | |
|----------------|----|--|-----------|------------------|
| レコード番号 | AN | 2011-2714113255 | COMPENDEX | <u>Full-text</u> |
| 標題 | TI | Improved utilisation of an HF transformer in DC-AC application | | |
| 著者名 | AU | De D.; Ramanarayanan V. | | |
| 所属機関・電子メールアドレス | CS | De D.; Ramanarayanan V. (Department of Electrical Engineering, Indian Institute of Science, Bangalore 560012 (IN)) EMAIL: dipankar@ee.iisc.ernet.in | | |
| 収録源 | SO | IET Power Electronics (May 2011) Volume 4, Number 5, pp. 508-515, 18 refs ISSN 1755-4535 E-ISSN: 1755-4543 DOI: 10.1049/iet-pe1.2010.0048 Published by: Institution of Engineering and Technology, Six Hills Way, Stevenage, SG1 2AY (GB) | | |
| 発行国 | CY | United Kingdom | | |
| 資料種類 | DT | Journal; Article | | |
| 言語 | LA | English | | |
| 抄録言語 (原報) | SL | English | | |
| 入力日 | ED | Entered STN: 12 Jul 2011 Last updated on STN: 12 Jul 2011 | | |
| 抄録 | AB | Power conversion using high frequency (HF) link converters is popular because of compact size and light weight of high-frequency transformer. This study focuses on improved utilisation of HF transformer in DC-AC applications. In practical application, the operating condition of the power converter deviates significantly from the designed considerations. These deviating factors are commutation requirements (dead-time, overlap), mismatch in device drops and presence of the fundamental frequency in load current. As a result, the HF transformer handles some amount of low-frequency components (including DC) other than desired H components. This causes the operating point in B-H curve to shift away from its normal or idealised position and hence results poor utilisation of the HF transformer and unwanted losses. This study investigates the nature of the problem with experimental determination of approximate lumped parameter modelling and saturation behaviour (B-H curve) of the HF transformer. A simple closed-loop control algorithm with online tuning of the controller parameters is proposed to improve the utilisation of the isolation transformer. The simulation and experimental results are presented. .COPYRGT. 2011 The Institution of Engineering and Technology. | | |
| 分類コード | GC | 706.1.1 Electric Power Transmission; 715 Electronic Equipment, General Purpose and Industrial; 723 Computer Software, Data Handling and Applications; 921 Applied Mathematics | | |
| 統制語 | CT | *DC transformers; Algorithms; DC power transmission | | |
| 補遺語 | ST | Closed-loop control; Compact size; Controller parameter; Deadtime; Experimental determination; Fundamental frequencies; HF transformers; High frequency; Isolation transformers; Light weight; Load currents; Low-frequency components; Lumped parameter modelling; Online tuning; Operating condition; Operating points; Power conversion | | |
| 元素記号 | ET | F*H; HF; H cp; cp; F cp; F*H; HF; H cp; cp; F cp; B*H; B-H | | |

書誌
情報
(BIB)

基本的に全レコードに
抄録, 索引がある

抄録
(ABS)

索引
情報
(IND)

元素記号を収録している
レコードもある

COMPENDEX ファイル

レコード例と表示形式

■ 主な定型表示形式

(2011 年 8 月)

| 表示形式 | 表示される内容 | 料金 |
|--------------------------------|--|-------|
| BIB (デフォルト) | AN, TI, AU, CS, NR, SO, PUI, CY, DT, LA, SL, ED | 398 円 |
| IBIB | BIB のインデント形式 | 398 円 |
| ABS | AN, AB | 無料 |
| IND | AN, CC, CT, ST, ET | 無料 |
| ALL | BIB, AB, CC, CT, ST, ET | 398 円 |
| DALL | ALL のデリミタ形式 | 398 円 |
| IALL | ALL のインデント形式 | 398 円 |
| ALLO | AN, TI, AU, MT, MO, ML, MD, SO, PY, MN, DT, LA, AB, CC, CT, ST, ET | 398 円 |
| TRIAL (TRI, SAMPLE, SAM, FREE) | TI, CC, CT, ST, ET | 無料 |
| SCAN | TI, CT (ランダム表示) | 無料 |
| HIT | ヒットタームを含むフィールド | * |
| KWIC | ヒットタームの前後 20 語 | * |

* 表示されるフィールドによって異なる

COMPENDEX ファイル

研究トピックの検索（基本索引の検索）

■ 基本索引の検索

- ・ COMPENDEX ファイルでは基本索引（標題，抄録，統制語，補遺語から切り出したすべての単語からなる索引）で前方一致，中間一致，後方一致検索が利用できる。

■ 検索例 1: (電気) 抵抗に関する文献を調査する.

```
=> FILE COMPENDEX                ← COMPENDEX ファイルに入る

=> S RESISTAN?                    ← 前方一致検索
L1      390739 RESISTAN?

=> E LEFT RESISTANCE 25           ← 後方一致検索可能なフィールドでは、
                                  EXPAND LEFT コマンドが利用できる
E1      1      MAGNETORESISTANC/B I
E2      4      RESISTANCCE/B I
E3      347171 --> RESISTANCE/B I
E4      1      ARESISTANCE/B I
E5      3      ACIDORESISTANCE/B I
      :

=> E 25
E26     4      CROSSRESISTANCE/B I
E27     5      CRYORESISTANCE/B I
      :
E35     1      ELECTRICALRESISTANCE/B I
E36     154    ELECTRORESISTANCE/B I
E37     1      ELECTROMAGNETORESISTANCE/B I
E38     2      EQUIRESISTANCE/B I
      :
E49     1      GOVERNINGFLOWRESISTANCE/B I
E50     1      GROUNDRESISTANCE/B I

=> S ?RESISTANCE                  ← 後方一致検索
L2      315643 ?RESISTANCE

=> S ?RESISTAN?                   ← 中間一致検索
L3      347601 ?RESISTAN?
```

参考: EXPAND LEFT コマンド

後方一致検索が可能なフィールドでは，EXPAND LEFT (省略形: E LEFT) コマンドを使用して，語の初めの部分が異なる語を探すことができる。EXPAND コマンドには，この他にもアルファベットの昇順に表示する EXPAND BACK 等のオプションがある。

| オプション | 内容 |
|-----------|--------------------------------|
| BACK | 入力した語をアルファベットの降順に表示 |
| LEFT | 入力した語の初めの部分が異なる語をアルファベット順に表示 |
| BACK LEFT | 入力した語の初めの部分が異なる語をアルファベットの昇順に表示 |

COMPENDEX ファイル

研究トピックの検索（統制語の検索）

■ 統制語（/CT）の検索

- ・ COMPENDEX ファイルでは、統制語による索引が付与されており /CT フィールドで検索できる。
 - 統制語は標題，抄録，補遺語フィールド中のタームとともに基本索引でも検索できる。
- ・ 統制語は，EXPAND コマンドを利用してオンラインシソーラスを使って調べることもできる。
 - 統制語シソーラスを参照するための関係コード

| コード | 主な表示内容 | コード | 主な表示内容 |
|------|--|------|----------------------------|
| ALL | すべての関係語 (BT, SELF, DA, NOTE, USE, USE+, NEW, UF, UF+, OLD, NT, RT, CC) | NOTE | 注記 (SELF, DA, NOTE) |
| | | NT | 下位語 (SELF, NT) |
| AUTO | 入力語と優先語 (SELF, USE, USE+, NEW, UF, UF+, OLD) | RT | 関連語 (SELF, RT, PT, CC) |
| BT | 上位語 (BT, SELF) | UF | 非優先語 (SELF, UF, UF+, OLD) |
| HIE | すべての上位語と下位語 (BT, SELF, NT) | USE | 優先語 (SELF, USE, USE+, NEW) |

* SELF: 入力語, CC: 分類コード, DA: 登録日

参考：統制語とクオリファイア

COMPENDEX ファイルでは、統制語にクオリファイアが付加されているケースがある。統制語 (/CT) フィールドを EXPAND することによって確認できる。

```
=> E SOLAR CELLS:/CT
E#  FREQUENCY  AT  TLANG  TERM
--  -
E1      1              SOLAR CELLS : SWITCHING/CT
E2      2              SOLAR CELLS-ARRAYS/CT
E3      0              JA --> SOLAR CELLS:/CT
E4      2              SOLAR CELLS:ACCESSORIES/CT
E5      5              SOLAR CELLS:AGING/CT
E6      4              SOLAR CELLS:ANALYSIS/CT
E7      1              SOLAR CELLS:ANODES/CT
E8     113            SOLAR CELLS:APPLICATIONS/CT
E9     492            SOLAR CELLS:ARRAYS/CT
```

```
:
=> S E8
L3      113 "SOLAR CELLS:APPLICATIONS"/CT
```

```
=> D CT
```

```
L3      ANSWER 1 OF 113 COMPENDEX COPYRIGHT 2011 EEI on STN
CT      *Automobiles; Air Pollution:Air Quality; Air Pollution:Mathematical
        Models; Automobiles:Electric; Automotive Engineering:Fuel Economy;
        Solar Cells:Applications
```


COMPENDEX ファイル

研究トピックの検索 (統制語の検索)

```

=> S E11                               ← E11 の統制語を検索する
L1      32040 "SOLAR CELLS"/CT

=> S E11+NT                             ← E11 の統制語を下位語も含めて検索する
L2      35530 "SOLAR CELLS"+NT/CT (6 TERMS)

=> D TRI                                 ← 1 番目の回答を TRI 表示形式で表示する

L2      ANSWER 1 OF 35530 COMPENDEX COPYRIGHT 2011 EEI on STN
TI      Synthesis and photoelectric performance of sheet ZnO thin films in
        dye-sensitized solar cells
CC      951 Materials Science; 804.2 Inorganic Compounds; 804.1 Organic
        Compounds; 802.3 Chemical Operations; 802.2 Chemical Reactions; 741.3
        Optical Devices and Systems; 741.1 Light and Optics; 714.2 Semiconductor
        Devices and Integrated Circuits; 708.2 Conducting Materials; 615.2 Solar
        Power; 546.3 Zinc and Alloys; 539 Metals Corrosion and Protection; Metal
        Plating; 531 Metallurgy and Metallography
CT      *Solar cells; Conductive films; Metallic films; Optical films;
        Photoelectrochemical cells; Precipitation (chemical);
        Pyrolysis; Substrates; Surface structure; Synthesis (chemical); Thin
        films; Urea; Zinc; Zinc oxide; Zinc sulfide
ST      Annealed temperature; Conductive glass; Dye-Sensitized solar cell; Dye-
        sensitized solar cells; Hexagonal wurtzite structure; Homogeneous precipitation
        method; Photoanode; Reaction temperature; Sheet; XRD; ZnO thin film
ET      O*Zn; ZnO; Zn cp; cp; 0 cp; 0*Zn; ZnO; Zn cp; cp; 0 cp; Zn
    
```

参考: ドイツ語の統制語とシソーラス

COMPENDEX ファイルには、ドイツ語の統制語も収録されており、ドイツ語の統制語に +ALL を付けて EXPAND すると対応する英語のシソーラスも表示できる。

```

=> FILE COMPENDEX

=> E AUSSENVERKLEIDUNG+ALL/CTDE
E1      7333   BT3  EN Structures (built objects)/CTDE
E2      0      DE  Bauwerke (erbaute Objekte)/CTDE
E3      36092 BT2  EN Buildings/CTDE
E4      0      DE  Gebaeude/CTDE
E5      499   BT1  EN Building components/CTDE
E6      0      DE  Gebaedeteile/CTDE
E7      546   EN  Facings/CTDE
E8      0      --> DE Aussenverkleidung/CTDE
        DA  EN January 1993
        DE  Januar 1993
E9      63    OLD  EN Buildings:Facings/CTDE
E10     746   RT   EN Facades/CTDE
E11     0      DE  Fassaden/CTDE
E12     176   RT   EN Revetments/CTDE
E13     0      DE  Verkleidungen/CTDE
E14     648   RT   EN Veneers/CTDE
E15     0      DE  Furniere/CTDE
E16     0      CC   EN 402/CTDE
E17     0      CC   EN 408.2/CTDE
***** END *****
    
```

COMPENDEX ファイル

研究トピックの検索 (統制語の検索)

- ・ 広く検索するには、基本索引で検索を行う

=> SET PLU ON;SET SPE ON
SET COMMAND COMPLETED

← 複数形や英米綴り違いなどを自動的に含める設定

SET COMMAND COMPLETED

=> S SOLAR(3W)(CELL OR BATTERY)

166800 SOLAR
8 SOLARS
166804 SOLAR
(SOLAR OR SOLARS)
371772 CELL
376145 CELLS
552225 CELL
(CELL OR CELLS)
40679 BATTERY
107940 BATTERIES
125018 BATTERY
(BATTERY OR BATTERIES)

L4 51678 SOLAR(3W)(CELL OR BATTERY)

=> S L4 NOT L2

L5 15715 L4 NOT L2

← 基本索引の検索でのみヒットしたレコードを確認

=> D TI AB IND

L5 ANSWER 1 OF 15715 COMPENDEX COPYRIGHT 2011 EEI on STN

TI Numerical simulation of the effects of p/i interface on the performance of microcrystalline silicon thin film **solar cells**

AB In this paper, the effects of p/i interface defect state density ($N_{tp/i}$) and the thickness of amorphous incubation layer (d) on the performance of the hydrogenated microcrystalline silicon thin film **solar cells** was studied by AMPS, which was developed by the University of Pennsylvania in US. The simulation results show that: the open circuit voltage V_{oc} and fill factor FF decrease monotonously while the short circuit current J_{sc} almost remains constant with the increase of $N_{tp/i}$; the J_{sc} and FF decrease while the V_{oc} increases with the increase of d . Photoelectric conversion efficiency .eta. decrease with the increase of $N_{p/i}$ or d . An explanation was given through analysis on the internal electrical field and energy band in the **solar cell**.

AN 2011-2914165049 COMPENDEX

CC 933.2 Amorphous Solids; 933.1 Crystalline Solids; 723.5 Computer Applications; 714.2 Semiconductor Devices and Integrated Circuits; 943 Mechanical and Miscellaneous Measuring Instruments; 712.1.2 Compound Semiconducting Materials; 615.2 Solar Power; 525.5 Energy Conversion; 423 Non Mechanical Properties and Tests of Building Materials; 701.1 Electricity, Basic Concepts and Phenomena

CT *Microcrystalline silicon; Amorphous films; Amorphous materials; Amorphous silicon; Computer simulation; Conversion efficiency; Defect density; Film thickness; Open circuit voltage; Photoelectricity; Semiconducting silicon compounds; Solar energy; Thin films

ST Electrical field; Energy band; Fill factor; Hydrogenated microcrystalline silicon; Incubation layer; Interface defects; Microcrystalline silicon thin films; Pennsylvania; Photoelectric conversion efficiency; Simulation result

ET Np

標題や抄録中などのターム
でヒットしている

COMPENDEX ファイル

研究トピックの検索（分類コードの検索）

■ 分類コードの検索

- ・ COMPENDEX ファイルでは、工学分野全体を分類した分類コード（/CC）が付与されており、分野による検索ができる。
 - 広い主題の検索や回答の絞込みなどに有効である。
- ・ 分類コードは 3 桁で表され、さらにピリオドを付けて細分化されている。

空輸に関する分類コード（分類コード 431）の例

| | | | |
|-----------------------|-------|---|-------------------|
| => <u>E 431/CC 15</u> | | | |
| E1 | 39 | 430/CC | |
| E2 | 39 | 430 TRANSPORTATION/CC | |
| E3 | 16972 | --> 431/CC | |
| E4 | 16972 | 431 AIR TRANSPORTATION/CC | ← 空輸関連（下位に分類されない） |
| E5 | 16216 | 431.1/CC | |
| E6 | 16216 | 431.1 AIR TRANSPORTATION, GENERAL/CC | ← 空輸一般 |
| E7 | 1450 | 431.2/CC | |
| E8 | 1450 | 431.2 PASSENGER AIR TRANSPORTATION/CC | ← 乗客の空輸 |
| E9 | 517 | 431.3/CC | |
| E10 | 517 | 431.3 CARGO AIR TRANSPORTATION/CC | ← 貨物の空輸 |
| E11 | 7088 | 431.4/CC | |
| E12 | 7088 | 431.4 AIRPORTS/CC | ← 空港 |
| E13 | 31323 | 431.5/CC | |
| E14 | 31323 | 431.5 AIR NAVIGATION AND TRAFFIC CONTROL/CC | ← 航空交通管制 |
| E15 | 61259 | 432/CC | |

- ・ 検索の際に下位分類は自動的に含まれないため、必要な分類を OR 演算するあるいは前方一致検索を利用する。

=> S E3

L1 16972 431/CC

=> S E3, E5, E7, E9, E11, E13

L2 67407 (431/CC OR 431.1/CC OR 431.2/CC OR 431.3/CC OR 431.4/CC OR 431.5/CC)

=> S 431?/CC

L3 67407 431?/CC

=> D TRI 1-2

L3 ANSWER 1 OF 67407 COMPENDEX COPYRIGHT 2011 EEI on STN
TI Simulating of evolution for the aviation service innovation competition with cellular automata
CC 921 Applied Mathematics; 911.4 Marketing; 911.2 Industrial Economics; 723 Computer Software, Data Handling and Applications; 716 Electronic Equipment, Radar, Radio and Television; 652.4 Helicopters; **431.1 Air Transportation, General**
CT *Competition; Aviation; Cellular automata; Flight simulators; Pattern recognition systems; Sales
ST Competition model; Evolution; Sales promotions; Service innovation

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研究トピックの検索 (分類コードの検索)

L3 ANSWER 2 OF 67407 COMPENDEX COPYRIGHT 2011 EEI on STN
TI Integrated navigation technology of reusable booster vehicle
CC 922 Statistical Methods; 921.2 Calculus; 921 Applied Mathematics; 903.1
Information Sources and Analysis; 654.2 Rocket Engines; 652.4
Helicopters; **431.5 Air Navigation and Traffic Control**
CT *Navigation; Boosters (rocket); Covariance matrix; Flight simulators;
Inertial navigation systems; Information fusion; Integration
ST Integrated navigation; Inversion; matrix; Partial information fusion;
Reusable boosters

- ・ 分類名中にある単語を使った検索もできる

=> S AIR TRANSPORTATION/CC
271986 AIR/CC
129194 TRANSPORTATION/CC
L4 34683 AIR TRANSPORTATION/CC
((AIR(S) TRANSPORTATION) /CC)

=> D TRI

L4 ANSWER 1 OF 34683 COMPENDEX COPYRIGHT 2011 EEI on STN
TI Simulating of evolution for the aviation service innovation competition
with cellular automata
CC 921 Applied Mathematics; 911.4 Marketing; 911.2 Industrial Economics;
723 Computer Software, Data Handling and Applications; 716 Electronic
Equipment, Radar, Radio and Television; 652.4 Helicopters; 431.1 **Air
Transportation, General**
CT *Competition; Aviation; Cellular automata; Flight simulators; Pattern
recognition systems; Sales
ST Competition model; Evolution; Sales promotions; Service innovation

L4 ANSWER 2 OF 34683 COMPENDEX COPYRIGHT 2011 EEI on STN
TI Lubricating properties of aviation oil 4010 under high-pressure micro
clearance
CC 943 Mechanical and Miscellaneous Measuring Instruments; 714.2
Semiconductor Devices and Integrated Circuits; 607.2 Lubrication; 607.1
Lubricants; 535.1 Metal Rolling; **431.1 Air Transportation, General**;
423 Non Mechanical Properties and Tests of Building Materials
CT *Elastohydrodynamic lubrication; Aviation; Film thickness; Lubricating
oils; Rolling; Thin films
ST Central film thickness; Contact pressures; Contact zone; Heavy loads;
High temperature; High-pressure micro clearance; Interference images;
Low speed; Low temperatures; Lubricating behavior; Lubricating
properties; Lubricating regime; Oil films; Rolling speed; Theoretical
formula; Thin film lubrication

COMPENDEX ファイル

研究トピックの検索（分類コードの検索）

■ 分類コードの主なカテゴリー

| 分類コード | 分類 |
|--------|--|
| | 土木・環境・地質・生体工学 |
| 400 番台 | CIVIL ENGINEERING |
| 410 番台 | CONSTRUCTION MATERIAL |
| 420 番台 | MATERIALS PROPERTIES & TESTING |
| 430 番台 | TRANSPORTATION |
| 440 番台 | WATER & WATERWORKS ENGINEERING |
| 450 番台 | POLLUTION, SANITARY ENGINEERING, WASTES |
| 460 番台 | BIOENGINEERING |
| 470 番台 | OCEAN AND UNDERWATER TECHNOLOGY |
| 480 番台 | ENGINEERING GEOLOGY |
| | 採鉱・金属・石油・燃料工学 |
| 500 番台 | MINING ENGINEERING, GENERAL |
| 510 番台 | PETROLEUM ENGINEERING |
| 520 番台 | FUEL TECHNOLOGY |
| 530 番台 | METALLURGICAL ENGINEERING, GENERAL |
| 540 番台 | METALLURGICAL ENGINEERING, METAL GROUPS |
| | 機械・自動車・原子力・航空宇宙工学 |
| 600 番台 | MECHANICAL ENGINEERING, GENERAL |
| 610 番台 | MECHANICAL ENGINEERING, PLANT AND POWER |
| 620 番台 | NUCLEAR TECHNOLOGY |
| 630 番台 | FLUID DYNAMICS & VACUUM TECHNOLOGY |
| 640 番台 | HEAT & THERMODYNAMICS |
| 650 番台 | AEROSPACE ENGINEERING |
| 660 番台 | AUTOMOTIVE ENGINEERING |
| 670 番台 | NAVAL ARCHITECTURE AND MARINE ENGINEERING |
| 680 番台 | RAILROAD ENGINEERING |
| 690 番台 | MATERIALS HANDLING |
| | 電気・電子・制御工学 |
| 700 番台 | ELECTRICAL ENGINEERING |
| 710 番台 | ELECTRONICS & COMMUNICATIONS |
| 720 番台 | COMPUTERS & DATA PROCESSING |
| 730 番台 | CONTROL ENGINEERING |
| 740 番台 | LIGHT AND OPTICAL TECHNOLOGY |
| 750 番台 | SOUND AND ACOUSTICAL TECHNOLOGY |
| | 化学・農学・食品工学 |
| 800 番台 | CHEMICAL ENGINEERING |
| 810 番台 | CHEMICAL PROCESS INDUSTRIES |
| 820 番台 | AGRICULTURAL ENGINEERING AND FOOD TECHNOLOGY |
| | 管理・数学・物理・機器・装置 |
| 900 番台 | ENGINEERING, GENERAL |
| 910 番台 | ENGINEERING MANAGEMENT |
| 920 番台 | ENGINEERING MATHEMATICS |
| 930 番台 | ENGINEERING PHYSICS |
| 940 番台 | INSTRUMENTS AND MEASUREMENT |
| 950 番台 | MATERIALS SCIENCE |
| 960 番台 | SYSTEMS SCIENCE |
| 970 番台 | SOCIAL SCIENCES |

COMPENDEX ファイル

資料種類による限定

- 資料種類 (/DT, Document Type) フィールドで回答を資料種類によって限定することができる。

=> S L# AND 資料種類 (完全名またはコード)/DT

- ・ 資料種類

| 内容 | 完全名 | コード |
|----------------------|---------------------------------------|-----|
| 応用 | APPLICATION | AP |
| 論文 | ARTICLE | AR |
| 伝記 | BIOGRAPHY | BIO |
| 書籍 | BOOK | B |
| 会議関連資料 | CONFERENCE | C |
| 会議資料 | CONFERENCE PAPER | — |
| 会議総説 | CONFERENCE REVIEW | — |
| 経済, 原価データ, 市場調査 | ECONOMIC, COST DATA, MARKET SURVEY | — |
| 論説 | EDITORIAL | ED |
| 訂正記事 | ERRATUM | — |
| 実験 | EXPERIMENTAL | EX |
| 総説 | GENERAL REVIEW | GR |
| 歴史的記事 | HISTORICAL | H |
| 雑誌論文 | JOURNAL | J |
| レター | LETTER | LE |
| 文献レビュー, ビブリオグラフィー | LITERATURE REVIEW, BIBLIOGRAPHY | — |
| 経営面 | MANAGEMENT ASPECTS | MG |
| ノート | NOTE | NO |
| 数値, 統計 | NUMERIC, STATISTICAL | — |
| レポート | REPORT | R |
| 簡単な調査 | SHORT SURVEY | — |
| 理論 | THEORETICAL | T |

- ・ 資料種類フィールド (/DT) で限定した場合, 1982 年以降のレコードに限定される。

COMPENDEX ファイル

検索例

■ 検索例 3 : 人工知能を用いた音声認識技術に関する最近の文献 (雑誌論文) を調査する.

- ・ 人工知能 (Artificial Intelligence) や音声認識 (Speech Recognition) は, 統制語シソーラスや分類コードから適切な検索語を選択して検索する.
- ・ 件数が多い場合は資料種類で雑誌論文 (J/DT) に限定する.

```

=> FILE COMPENDEX                               ← COMPENDEX ファイルに入る

=> E ARTIFICIAL INTELLIGENCE/CT                 ← 人工知能 (Artificial Intelligence)
                                                の統制語を調べる
E#  FREQUENCY  AT TLANG  TERM
--  -
E1          1          ARTIFICIAL INTELLIGENCE/CT
E2          1          ARTIFICIAL INTELLIGENCE:MEDICAL APPLICATIONS/CT
E3       75697    47  EN --> ARTIFICIAL INTELLIGENCE/CT
E4          81          ARTIFICIAL INTELLIGENCE /CT
E5          2          ARTIFICIAL INTELLIGENCE : APPLICATIONS/CT
:

=> E E3+ALL                                       ← E3 に +ALL を付けて EXPAND する
E1       1952    BT2  EN Systems science/CT
E2          0          DE Systemwissenschaft/CT
E3       10408    BT1  EN Cybernetics/CT
E4          0          DE Kybernetik/CT
E5       75697    --> EN Artificial intelligence/CT
E6          0          DE kuenstliche Intelligenz/CT
                        DA  EN January 1986
                        DE Januar 1986
E7          5          UF  EN AI/CT
E8          3          DE KI/CT
E9       10169    NT1  EN Knowledge engineering/CT
E10         0          DE wissensbasierte Technik/CT
E11       14363    NT2  EN Knowledge acquisition/CT
E12         0          DE Wissenserfassung/CT
E13       8995    NT2  EN Knowledge representation/CT
E14         0          DE Wissensdarstellung/CT
E15       14832    RT   EN Adaptive systems/CT
E16         0          DE adaptive Systeme/CT
E17       16126    RT   EN Backpropagation/CT
E18       16126    DE   DE Backpropagation/CT
E19       1457    RT   EN Brain models/CT
E20         0          DE Gehirnmodelle/CT
:
E41       32423    RT   EN Robots/CT
E42         0          DE Roboter/CT
E43       6604    RT   EN System theory/CT
E44         0          DE Systemtheorie/CT
E45       47966    RT   EN Theorem proving/CT
E46         0          DE Theorembeweisfuehrung/CT
E47         0          CC  EN 723.4/CT           ← 分類コード
***** END *****

=> S E5+NT                                       ← 下位語も含めて統制語を検索する
L1       105137  "ARTIFICIAL INTELLIGENCE"+NT/CT (8 TERMS)

```


COMPENDEX ファイル

検索例

=> S E3+AUTO ← 非優先語 (UF) や旧統制語 (OLD) も
 L4 23000 "SPEECH RECOGNITION"+AUTO/CT (7 TERMS) 含めて統制語を検索する

=> S L3 AND L4
 L5 4971 L3 AND L4

=> S L5 AND 2010=<PY ← 2010 年以降に発行された文献に限定する
 L6 1122319 2010=<PY
 644 L5 AND 2010=<PY

=> S L6 AND J/DT ← 雑誌論文に限定する
 L7 7395499 J/DT
 240 L6 AND J/DT

=> D TRI 1-10 ← 1-10 件目を TRI 表示形式で表示 (無料)

L7 ANSWER 1 OF 240 COMPENDEX COPYRIGHT 2011 EEI on STN
 TI Unifying low-level and high-level music similarity measures
 CC **723.4 Artificial Intelligence**; 723.5 Computer Applications; 903.2
 Information Dissemination; 903.3 Information Retrieval and Use; 922.2
 Mathematical Statistics
 CT *Principal component analysis; Information retrieval; Knowledge
 acquisition; Semantics; **Speech recognition**
 ST Audio content; Descriptors; Distance measure; Distance-based; Euclidean
 distance; Feature space; Gaussians; High level semantics; Mel-frequency
 cepstral coefficients; Multimedia computing; Multimedia database;
 Multimedia Retrieval; music; Music collection; Music similarity

L7 ANSWER 2 OF 240 COMPENDEX COPYRIGHT 2011 EEI on STN
 TI Articulatory information for noise robust speech recognition
 CC 716 Electronic Equipment, Radar, Radio and Television; **723.4 Artificial
 Intelligence**; 751.4 Acoustic Noise; 751.5 Speech; 901.3 Engineering
 Research; 903.1 Information Sources and Analysis
 CT ***Speech recognition**; Acoustic noise; Feature extraction; Neural
 networks; Research; Vocabulary control
 ST Articulatory phonology; articulatory speech recognition; artificial
 neural networks (ANNs); noise-robust speech recognition; speech
 inversion; task dynamic model; Vocal-tracts

L7 ANSWER 4 OF 240 COMPENDEX COPYRIGHT 2011 EEI on STN
 TI Bayesian networks for discrete observation distributions in speech
 recognition
 CC 922.1 Probability Theory; 922 Statistical Methods; 921.4 Combinatorial
 Mathematics, Includes Graph Theory, Set Theory; 723.5 Computer
 Applications; **723.4.1 Expert Systems**; 718 Telephone and Other Line
 Communications; 717 Electro-Optical Communication; 716 Electronic
 Equipment, Radar, Radio and Television; 703.1 Electric Networks
 CT ***Speech recognition**; Bayesian networks; Distributed parameter
 networks; Graphic methods; Hidden Markov models; Inference engines;
 Intelligent networks; Maximum likelihood; Random variables
 ST Baseline systems; Discrete random variables; expectation maximization;
 Feature vectors; Gaussian mixtures; Gaussian model; Graphical model;
 Inter-feature dependencies; Joint statistics; Mixtures of Gaussians;
 Multi-modal; Robustness against noise; Speech features; Unimodal
 distribution

COMPENDEX ファイル

検索例

=> D 4 ALL

← 4 件目を ALL 表示形式で表示する

L7 ANSWER 4 OF 240 COMPENDEX COPYRIGHT 2011 EEI on STN
 AN 2011-2214024293 COMPENDEX
 TI Bayesian networks for discrete observation distributions in speech recognition
 AU Miguel Antonio; Ortega Alfonso; Lleida Eduardo; Buera Luis
 CS Miguel Antonio; Ortega Alfonso; Lleida Eduardo (Aragon Institute of Engineering Research (I3A), University of Zaragoza, 50018 Zaragoza (ES)); Buera Luis (Speech Technology Group, Agnitio S.L., 28013 Madrid (ES))
 SO EMAIL: amiguel@unizar.es; ortega@unizar.es; lleida@unizar.es; lbuera@agnitio.es
 IEEE Transactions on Audio, Speech and Language Processing (2011)
 Volume 19, Number 6, pp. 1476-1489, arn: 5638127, 57 refs.
 ISSN 1558-7916
 DOI: 10.1109/TASL.2010.2092764
 Published by: Institute of Electrical and Electronics Engineers Inc.,
 445 Hoes Lane / P.O. Box 1331, Piscataway, NJ 08855-1331 (US)
 CY United States
 DT Journal; Article
 LA English
 SL English
 ED Entered STN: 14 Jun 2011
 Last updated on STN: 14 Jun 2011
 AB Traditionally, in speech recognition, the hidden Markov model state emission probability distributions are usually associated to continuous random variables, by using Gaussian mixtures. Thus, complex multimodal inter-feature dependencies are not accurately modeled by Gaussian models, since they are unimodal distributions and mixtures of Gaussians are needed in these complex cases, but this is done in a loose and inefficient way. Graphical models provide a precise and simple mechanism to model the dependencies among two or more variables. This paper proposes the use of discrete random variables as observations and graphical models to extract the internal dependence structure in the feature vectors. Therefore, speech features are quantized to a small number of levels, in order to obtain a tractable model. These quantized speech features provide a mechanism to increase the robustness against noise uncertainty. In addition, discrete random variables allow the learning of joint statistics of the observation densities. A method to estimate a graphical model with a constrained number of dependencies is shown in this paper, being a special kind of Bayesian network. Experimental results show that by using this modeling, better performance can be obtained compared to standard baseline systems.
 .COPYRGT. 2011 IEEE.
 CC 922.1 Probability Theory; 922 Statistical Methods; 921.4 Combinatorial Mathematics, Includes Graph Theory, Set Theory; 723.5 Computer Applications; 723.4.1 Expert Systems; 718 Telephone and Other Line Communications; 717 Electro-Optical Communication; 716 Electronic Equipment, Radar, Radio and Television; 703.1 Electric Networks
 CT *Speech recognition; Bayesian networks; Distributed parameter networks; Graphic methods; Hidden Markov models; Inference engines; Intelligent networks; Maximum likelihood; Random variables
 ST Baseline systems; Discrete random variables; expectation maximization; Feature vectors; Gaussian mixtures; Gaussian model; Graphical model; Inter-feature dependencies; Joint statistics; Mixtures of Gaussians; Multi-modal; Robustness against noise; Speech features; Unimodal distribution

COMPENDEX ファイル

検索フィールド一覧

■ 検索フィールド一覧

| コード | フィールド名 | 使用例 | 備考 |
|--------------|---|--|--|
| なし (/BI) | 基本索引 標題 (TI), 抄録 (AB), 分類コード (CC), 統制語 (CT), 補遺語 (ST) (以上からの切出し語) | S TURBOSHAFT ENGINE# S DIGITAL (2W) CONTROL S JET (L) TURBINE# S FEEDBACK S ?LASER? | ・ 中間一致, 後方一致検索も可能 |
| /AB | 抄録 | S ?SYMMETRI?/AB | ・ 中間一致検索, 後方一致検索も可能 |
| /AN | レコード番号 | S 2008-4911759913/AN | |
| /AU | 著者名 (編集者名) | S CHENEY PAUL H/AU S HERMAN, ?/AU | ・ 所属機関名 (/CS) と (P) 演算子でリンク可能 |
| /CC | 分類コード (コードおよび分類項目名) | S 538.1/CC S (BRIDGES TUNNELS)/CC | |
| /CS | 所属機関名 | S (IBM (S) LOS (W) GATOS)/CS | ・ 著者名 (/AU) と (P) 演算子でリンク可能 |
| /CT | 統制語 | S MAN MACHINE SYSTEMS/CT S *MOTOR TRANSPORTATION/CT S (FAILURE ANALYSIS (S) AUTOMAT?)/CT S MAGNETIC RESONANCE+NT/CT | ・ 統制語の対 (主ターム/クオリファイア) は (S) 演算子で検索可能 ・ シソーラス利用可能 |
| /CTDE | 統制語 (ドイツ語) | S AUSSENVERKLEIDUNG+ALL/CTDE S FACINGS/CTDE | ・ 独語の EXPAND によって, 対応する英語シソーラス語の表示が可能 |
| /CW | 統制語 (単語) | S MOTOR TRUCK TERMINALS/CW | |
| /CY | 発行国 (コードおよびテキスト) | S US/CY S AUSTRALIA/CY | |
| /DT (/TC) | 資料種類 (コードおよびテキスト) | S B/DT S REPORT/DT | ・ 1985 年以降について利用可能 |
| /EML | 電子メールアドレス | S AMERICAN EDU/EML | |
| /ET | 元素記号 (元素記号, 化学式, 化合物 (CP), 材料 (SY:2 金属以上), ドーパント, 陰イオン (IN), 陽イオン (IP), 同位体 (IS), 核反応 (ターゲット T, 反応 R, 最終核種 F) を含む) | S AL*CU*MG/ET S MG CP/ET S TI SY 3/ET S SI:H/ET S NA IS/ET S 97MO T/ET | ・ 元素記号間にアスタリスク (*) をつけ Hill 方式の順序で収録 |
| /FA | フィールドの存在 | S L1 AND AB/FA | |
| /ISN | 国際標準 (資料) 番号 (CODEN, ISBN, ISSN を含む) | S MACYAC/ISN S 1212-4834/ISN S 9197040843/ISN | |
| /JT | 雑誌名 (完全名と略名) | S ACTA ASTRONAUTICA/JT S J ACOUST SOC AM/JT | |
| /LA | 言語 (ISO コードおよびテキスト) | S RU/LA S FRENCH/LA | |

INSPEC ファイル

検索フィールド一覧

■ 検索フィールド一覧（続き）

| コード | フィールド名 | 使用例 | 備考 |
|-------------------|--|---|------------------|
| /MD | 会議開催日 | S 19900425-19900427/MD | |
| /ML | 会議開催場所 | S BRUSSELS/ML | |
| /MN | 会議番号 | S 13230/MN | |
| /MO | 会議開催者 | S TECHNOLOGY GROUP/MO | |
| /MT | 会議名 | S ELECTRONIC MANUFACT?/MT | |
| /MY | 会議開催年 | S 1990/MY | |
| /NR | レポート番号 | S AIAA 2005-818/NR | |
| /PB | 出版社 | S SPRINGER HEIDELBERG/PB | |
| /PD | 発行日 | S JAN 2004-MAR 2004/PD | |
| /PUI | 出版社識別番号 | S 1011092002203496/PUI | |
| /PY | 発行年 | S L1 AND 1981-1983/PY | |
| /REC (/RE.CNT) | 引用文献数 | S L1 AND REC<10 | |
| /SL | 抄録言語 | S GERMAN/SL S DE/SL | |
| /SO | 収録源（雑誌名とその他の高次標題，ISBN，ISSN，CODEN，SICI，ThetaRL，巻・号・頁，発行者，会議情報を含む） | S TRANSP SCI/SO S NATMA4/SO S 0499-9320/SO S (SENSING (S) VEGETAT?)/SO S 08030606016/SO | |
| /ST | 補遺語 | S GADOLINIUM/ST | |
| /TI | 標題 | S LONGWALL MINING/TI S ?ALLOCATION?/TI | ・ 中間一致，後方一致検索も可能 |
| /WC.T | 標題の単語数 | S L1 AND WC.T>10 | |
| /ED | 入力日 | S L1 AND ED>20090109 | |
| /UP | 更新日 | S UP=FEB 2009 | |

COMPENDEX ファイル

分類コード一覧

■ 分類コード一覧

(2011 年 8 月)

| コード | 内 容 |
|-------|--|
| 土木工学 | |
| 400 | CIVIL ENGINEERING, GENERAL |
| 401 | BRIDGES AND TUNNELS |
| 401.1 | BRIDGES |
| 401.2 | TUNNELS AND TUNNELING |
| 402 | BUILDINGS AND TOWERS |
| 402.1 | INDUSTRIAL AND AGRICULTURAL BUILDINGS |
| 402.2 | PUBLIC BUILDINGS |
| 402.3 | RESIDENCES |
| 402.4 | TOWERS |
| 403 | URBAN AND REGIONAL PLANNING AND DEVELOPMENT |
| 403.1 | URBAN PLANNING AND DEVELOPMENT |
| 403.2 | REGIONAL PLANNING AND DEVELOPMENT |
| 404 | CIVIL DEFENSE AND MILITARY ENGINEERING |
| 404.1 | MILITARY ENGINEERING |
| 404.2 | CIVIL DEFENSE |
| 405 | CONSTRUCTION EQUIPMENT AND METHODS, SURVEYING |
| 405 | CONSTRUCTION EQUIPMENT AND METHODS |
| 405.1 | CONSTRUCTION EQUIPMENT |
| 405.2 | CONSTRUCTION METHODS |
| 405.3 | SURVEYING |
| 406 | HIGHWAY ENGINEERING |
| 406.1 | HIGHWAY SYSTEMS |
| 406.2 | ROADS AND STREETS |
| 407 | MARITIME AND PORT STRUCTURES, RIVERS AND OTHER WATERWAYS |
| 407 | MARITIME AND PORT STRUCTURES |
| 407.1 | MARITIME STRUCTURES |
| 407.2 | WATERWAYS |
| 407.3 | COASTAL ENGINEERING |
| 408 | STRUCTURAL DESIGN |
| 408.1 | STRUCTURAL DESIGN, GENERAL |
| 408.2 | STRUCTURAL MEMBERS AND SHAPES |
| 409 | CIVIL ENGINEERING, GENERAL |
| 建設原料 | |
| 410 | CONSTRUCTION MATERIALS |
| 411 | BITUMINOUS MATERIALS |
| 411.1 | ASPHALT |
| 411.2 | COAL TAR |
| 412 | CONCRETE |
| 412.1 | CEMENT |
| 412.2 | CONCRETE REINFORCEMENTS |

COMPENDEX ファイル

分類コード一覧

■ 分類コード一覧

(2011 年 8 月)

| コード | 内 容 |
|------------|--|
| 建設原料 (続き) | |
| 413 | INSULATING MATERIALS |
| 413.1 | ELECTRIC INSULATING MATERIALS |
| 413.2 | HEAT INSULATING MATERIALS |
| 413.3 | SOUND INSULATING MATERIALS |
| 414 | MASONRY MATERIALS |
| 414.1 | BRICKMAKING |
| 414.2 | BRICK MATERIALS |
| 414.3 | MORTAR |
| 415 | METALS, PLASTICS, WOOD AND OTHER STRUCTURAL MATERIALS |
| 415.1 | METAL STRUCTURAL MATERIALS |
| 415.2 | PLASTICS STRUCTURAL MATERIALS |
| 415.3 | WOOD STRUCTURAL MATERIALS |
| 415.4 | OTHER STRUCTURAL MATERIALS |
| 建築材料 物性と試験 | |
| 420 | BUILDING MATERIALS PROPERTIES AND TESTING |
| 421 | STRENGTH OF BUILDING MATERIALS, MECHANICAL PROPERTIES" |
| 421 | STRENGTH OF BUILDING MATERIALS |
| 422 | STRENGTH OF BUILDING MATERIALS, TEST EQUIPMENT AND METHODS |
| 422 | STRENGTH OF BUILDING MATERIALS |
| 422.1 | TEST EQUIPMENT |
| 422.2 | TEST METHODS |
| 423 | NON MECHANICAL PROPERTIES AND TESTS OF BUILDING MATERIALS |
| 423.1 | TEST EQUIPMENT |
| 423.2 | TEST METHODS |
| 輸送 | |
| 430 | TRANSPORTATION |
| 431 | AIR TRANSPORTATION |
| 431.1 | AIR TRANSPORTATION, GENERAL |
| 431.2 | PASSENGER AIR TRANSPORTATION |
| 431.3 | CARGO AIR TRANSPORTATION |
| 431.4 | AIRPORTS |
| 431.5 | AIR NAVIGATION AND TRAFFIC CONTROL |
| 432 | HIGHWAY TRANSPORTATION |
| 432.1 | HIGHWAY TRANSPORTATION, GENERAL |
| 432.2 | PASSENGER HIGHWAY TRANSPORTATION |
| 432.3 | CARGO HIGHWAY TRANSPORTATION |
| 432.4 | HIGHWAY TRAFFIC CONTROL |

COMPENDEX ファイル

分類コード一覧

■ 分類コード一覧

(2011 年 8 月)

| コード | 内 容 |
|-----------|---|
| 輸送 (続き) | |
| 433 | RAILROAD TRANSPORTATION |
| 433.1 | RAILROAD TRANSPORTATION, GENERAL |
| 433.2 | PASSENGER RAILROAD TRANSPORTATION |
| 433.3 | FREIGHT RAILROAD TRANSPORTATION |
| 433.4 | RAILROAD TRAFFIC CONTROL |
| 434 | WATERWAY TRANSPORTATION |
| 434.1 | WATERWAY TRANSPORTATION, GENERAL |
| 434.2 | PASSENGER WATERWAY TRANSPORTATION |
| 434.3 | CARGO WATERWAY TRANSPORTATION |
| 434.4 | WATERWAY NAVIGATION |
| 水および上水道工学 | |
| 440 | WATER AND WATERWORKS ENGINEERING |
| 441 | DAMS AND RESERVOIRS, HYDRO DEVELOPMENT |
| 441 | DAMS AND RESERVOIRS |
| 441.1 | DAMS |
| 441.2 | RESERVOIRS |
| 441.3 | RELATED HYDRAULIC STRUCTURES |
| 442 | FLOOD CONTROL, LAND RECLAMATION |
| 442 | FLOOD CONTROL |
| 442.1 | FLOOD CONTROL |
| 442.2 | LAND RECLAMATION |
| 443 | METEOROLOGY |
| 443.1 | ATMOSPHERIC PROPERTIES |
| 443.2 | METEOROLOGICAL INSTRUMENTATION |
| 443.3 | PRECIPITATION |
| 444 | WATER RESOURCES |
| 444.1 | SURFACE WATER |
| 444.2 | GROUNDWATER |
| 445 | WATER TREATMENT |
| 445.1 | WATER TREATMENT TECHNIQUES |
| 445.1.1 | POTABLE WATER TREATMENT TECHNIQUES |
| 445.1.2 | WATER TREATMENT TECHNIQUES FOR INDUSTRIAL USE |
| 445.2 | WATER ANALYSIS |
| 446 | WATERWORKS |
| 446.1 | WATER SUPPLY SYSTEMS |
| 446.2 | RELATED HYDRAULIC STRUCTURES |

COMPENDEX ファイル

分類コード一覧

■ 分類コード一覧

(2011 年 8 月)

| コード | 内 容 |
|-------------|--|
| 汚染、衛生工学、廃棄物 | |
| 450 | POLLUTION, SANITARY ENGINEERING AND WASTES |
| 451 | AIR POLLUTION |
| 451.1 | AIR POLLUTION SOURCES |
| 451.2 | AIR POLLUTION CONTROL |
| 452 | SEWAGE AND INDUSTRIAL WASTES TREATMENT |
| 452.1 | SEWAGE |
| 452.2 | SEWAGE TREATMENT |
| 452.3 | INDUSTRIAL WASTES |
| 452.4 | INDUSTRIAL WASTES TREATMENT |
| 453 | WATER POLLUTION |
| 453.1 | WATER POLLUTION SOURCES |
| 453.2 | WATER POLLUTION CONTROL |
| 454 | ENVIRONMENTAL ENGINEERING |
| 454.1 | ENVIRONMENTAL ENGINEERING, GENERAL |
| 454.2 | ENVIRONMENTAL IMPACT AND PROTECTION |
| 454.3 | ECOLOGY AND ECOSYSTEMS |
| 生物工学 | |
| 460 | BIOENGINEERING |
| 461 | BIOENGINEERING |
| 461.1 | BIOMEDICAL ENGINEERING |
| 461.2 | BIOLOGICAL MATERIALS |
| 461.3 | BIOMECHANICS |
| 461.4 | HUMAN ENGINEERING |
| 461.5 | HUMAN REHABILITATION ENGINEERING |
| 461.6 | MEDICINE |
| 461.7 | HEALTH CARE |
| 461.8 | BIOTECHNOLOGY |
| 461.8.1 | GENETIC ENGINEERING |
| 461.8.2 | BIOINFORMATICS |
| 461.9.1 | IMMUNOLOGY |
| 461.9.2 | MICROBIOLOGY |
| 462 | BIOMEDICAL EQUIPMENT |
| 462.1 | BIOMEDICAL EQUIPMENT, GENERAL |
| 462.2 | HOSPITALS, EQUIPMENT AND SUPPLIES |
| 462.3 | DENTAL EQUIPMENT AND SUPPLIES |
| 462.4 | PROSTHETICS |
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| 471.2 | OCEANOGRAPHIC RESEARCH INSTRUMENTS |
| 471.3 | OCEANOGRAPHIC TECHNIQUES |
| 471.4 | SEAWATER, TIDES AND WAVES |
| 471.5 | SEA AS SOURCE OF MINERALS AND FOOD |
| 472 | OCEAN ENGINEERING |
| 土木地質学 | |
| 480 | ENGINEERING GEOLOGY |
| 481 | GEOLOGY AND GEOPHYSICS |
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| 481.1.1 | GEOMORPHOLOGY |
| 481.1.2 | PETROLOGY |
| 481.2 | GEOCHEMISTRY |
| 481.3 | GEOPHYSICS |
| 481.3.1 | GEOTHERMAL PHENOMENA |
| 481.3.2 | EARTH MAGNETISM AND TERRESTRIAL ELECTRICITY |
| 481.4 | GEOPHYSICAL PROSPECTING |
| 482 | MINERALOGY |
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| 483 | SOIL MECHANICS AND FOUNDATIONS |
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| 484 | SEISMOLOGY |
| 484.1 | EARTHQUAKE MEASUREMENTS AND ANALYSIS |
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| 501.2 | EXPLORATION AND PROSPECTING INSTRUMENTATION |
| 502 | MINES AND QUARRY EQUIPMENT AND OPERATIONS |
| 502.1 | MINE AND QUARRY OPERATIONS |
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| 503 | MINES AND MINING, COAL |
| 503.1 | COAL MINES |
| 503.2 | COAL MINING OPERATIONS |
| 503.3 | COAL MINING EQUIPMENT |
| 504 | MINES AND MINING, METAL |
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| 504.3 | HEAVY METAL MINES |
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| 504.5 | URANIUM MINES |
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| 505 | MINES AND MINING, NONMETALLIC |
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| 506 | MINING ENGINEERING, GENERAL |
| 石油工学 | |
| 510 | PETROLEUM ENGINEERING |
| 511 | OIL FIELD EQUIPMENT AND PRODUCTION OPERATIONS |
| 511.1 | OIL FIELD PRODUCTION OPERATIONS |
| 511.2 | OIL FIELD EQUIPMENT |
| 512 | PETROLEUM AND RELATED DEPOSITS |
| 512.1 | PETROLEUM DEPOSITS |
| 512.1.1 | OIL FIELDS |
| 512.1.2 | DEVELOPMENT OPERATIONS |
| 512.2 | NATURAL GAS DEPOSITS |
| 512.2.1 | NATURAL GAS FIELDS |
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| 513 | PETROLEUM REFINING |
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| 521 | FUEL COMBUSTION AND FLAME RESEARCH |
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| 521.3 | FUEL BURNERS |
| 521.4 | FLAME RESEARCH |
| 522 | GAS FUELS |
| 523 | LIQUID FUELS |
| 524 | SOLID FUELS |
| 525 | ENERGY MANAGEMENT |
| 525.1 | ENERGY RESOURCES |
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| 534 | FOUNDRIES AND FOUNDRY PRACTICE |
| 534.1 | FOUNDRIES |
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| 535 | ROLLING, FORGING AND FORMING |
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| 538.1.1 | SOLDERING |
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| 539 | METALS CORROSION AND PROTECTION, METAL PLATING |
| 539 | METALS CORROSION AND PROTECTION |
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| 542.1 | BERYLLIUM AND ALLOYS |
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| 543 | CHROMIUM, MANGANESE, MOLYBDENUM, TANTALUM, TUNGSTEN, VANADIUM AND ALLOYS |
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| 610 | MECHANICAL ENGINEERING, PLANT AND POWER |
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| 615.6 | WAVE ENERGY |
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| 流体流動, 水力学, 気力学, 真空 | |
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| 641 | HEAT AND MASS TRANSFER |
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| 641.2 | HEAT TRANSFER |
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| 643 | SPACE HEATING AND AIR CONDITIONING |
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