DIALOG

2,3,4

INSPEC
ONTAP® INSPEC (FILE 213)

FILE DESCRIPTION

INSPEC (The Database for Physics, Electronics and Computing) corresponds to the three Science Abstracts print publications: *Physics Abstracts*, *Electrical and Electronics Abstracts*, and *Computer and Control Abstracts*. The Science Abstracts family of abstract journals began publication in 1898. Approximately 16 percent of the database's source publications are in languages other than English, but all articles are abstracted and indexed in English. Author-prepared abstracts are used when available.

The INSPEC Database utilizes controlled vocabulary from the *INSPEC Thesaurus*. A single classification scheme is used for all records from 1969 to date. The special DIALOG online thesaurus feature is available to assist searchers in determining appropriate subject terms and codes. Beginning in January 1987, INSPEC records also include chemical substance indexing and numerical index terms.

As of November 1990, over 4,100 journals and serials are scanned, of which 750 are abstracted cover-to-cover. These contribute 82% of the database, including 6% which are conference papers reported in journals. A further 16% comes from conference proceedings. Other source materials include books, reports, and dissertations. Up to 1976 a small number of patents were covered.

File 213 is available for **ON**line **T**raining **A**nd **P**ractice and contains INSPEC records from January and February 1989.

SUBJECT COVERAGE

The principal subject areas within each subfile are:

Physics (Subfile A)
Acoustics, Astronomy and Astrophysics, Atomic and Molecular Physics, Biophysics and Medical Physics, Elementary Particle Physics, Energy Research, Environmental Science, Gases, Fluid Dynamics and Plasmas, Geophysics, Instrumentation and Measurement, Materials Science, Mathematics and Mathematical Physics, Nuclear Physics, Optics (including Lasers), Physical Chemistry, Properties of Matter, Quantum Mechanics, Thermodynamics

Elec. Engineering & Electronics (Subfile B)
Circuits and Components, Electricity Generation and Supply, Electromagnetic Fields and Waves, Electronic Devices and Materials, Electronic Instrumentation, Optics and Electro-optics, Power Systems and Applications, Radar and Radionavigation, Telecommunications

Computers & Control (Subfile C)
Computational Mathematics, Computer Applications, Computer Hardware, Computer Software, Control Applications, Control Systems, Information Science, Systems and Control Theory

Information Technology (Subfile D)
Business and Financial Applications, Communications, Computing and Systems, Engineering and Industry Applications, Management, Office Automation

DIALOG FILE DATA

Inclusive Dates: 1969 to present (File 2)
1969 to 1982 (File 3)
1983 to the present (File 4)
January and February 1989 (File 213)

Update Frequency:
Weekly (approx.5,000 records per update) (File 2)
Closed (File 3)
Weekly (approx. 5,000 records per update) (File 4)
Closed (File 213)

File Size:
Over 5,850,000 records as of March 1998 (File 2)
1,959,518 records (File 3)
Over 3,891,000 records as of March 1998 (File 4)
37,667 records (File 213)

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SAMPLE RECORD

DIALOG(R)File 2:INSPEC

AZ= 3603153 A90052690, B90029589
/TI Title: A 970 nm strained-layer InGaAs/GaAlAs quantum well laser for pumping an erbium-doped optical fiber amplifier
AU= Author(s): Ming C. Wu; Olsson, N.A.; Sivco, D.; Cho, A.Y.
CS= Author Affil: AT&T Bell Labs., Murray Hill, NJ, USA
JN=, SO= Journal: Applied Physics Letters vol.56, no.3 pp.: 221-3
PY=, CP= Publication Date: 15 Jan. 1990 Country of Publication: USA
CD=, SN= CODEN: APPLAB ISSN: 0003-6951
U.S. Copyright Clearance Center Code: 0003-6951/90/030221-03 $02.00
TC= Treatment: Experimental (X)
LA=, DT= Language: English Document Type: JOURNAL PAPER (JP)
(18 Refs)
/AB Abstract: The authors report the performance of a 970 nm strained-layer InGaAs/GaAlAs quantum well laser and its application for pumping Er-doped optical fiber amplifiers. The laser was grown by molecular beam epitaxy and has three In/sub 0.2/Ga/sub 0.8/As/GaAs quantum wells. For a 5- mu m-wide and 400-mu m-long ridge-waveguide laser, a CW threshold current of 20 mA and an external quantum efficiency of 0.28 mW/mA per facet were obtained. Maximum output power exceeds 32 mW/facet. With antireflection coating, even higher external quantum efficiency (0.40 mW/mA) was achieved, and more than 20 mW of power was coupled into a single mode fiber. Preliminary experiments of pumping the Er-doped fiber amplifier gave 15 dB of gain at 1.555 mu m for a pump power of 14 mW into the Er fiber.
/DE Descriptors: erbium; fibre optics; gallium compounds; gradient index optics; indium compounds; optical fibres; optical pumping; optical waveguides; semiconductor junction lasers; solid lasers
/ID Identifiers: GRIN-SCH laser; strained-layer; quantum well laser ; pumping; optical fiber amplifier; Er-doped optical fiber; molecular beam epitaxy; ridge-waveguide laser; CW threshold current; external quantum efficiency; output power; antireflection coating; single mode fiber; gain; 970 nm; 1.555 micron; 5 micron; 14 mW; 400 micron; 20 mA; In/sub 0.2/Ga/sub 0.8/As-GaAs; InGaAs-GaAlAs
CI= Chemical Indexing:
In0.2Ga0.8As-GaAs int - In0.2Ga0.8As int - Ga0.8 int - In0.2 int - GaAs int - As int - Ga int - In int - In0.2Ga0.8As ss - Ga0.8 ss - In0.2 ss - As ss - Ga ss - In ss - GaAs bin - As bin - Ga bin (Elements - 3,2,3)
NE= Er ss - Er el - Er dop (Elements - 1)
InGaAs-GaAlAs int - GaAlAs int - InGaAs int - Al int - As int - Ga int - In int - GaAlAs ss - InGaAs ss - Al ss - As ss - Ga ss - In ss (Elements - 3.3.4)
NI=, WA= Numerical Indexing: wavelength 9.7E-07 m; wavelength 1.555E-06 m; size 5.0E-06 m; power 1.4E-02 W; size 4.0E-04 m; current current 2.0E-02 A
SI=, PO=
CU=
CC=, CN= Class Codes: A4260B (Design of specific laser systems); A4255P (Lasing action in semiconductors with junctions); A4280L (Optical waveguides and couplers); A4281F (Other optical properties); A4255R (Lasing action in other solids); B4320J (Semiconductor junction lasers); B4125 (Fibre optics); B4130 (Optical waveguides); B4320G (Solid lasers)

SEARCH OPTIONS

BASIC INDEX

SEARCH SUFFIX	DISPLAY CODE	FIELD NAME	INDEXING	SELECT EXAMPLES
—	—	All Basic Index Fields	Word	S THRESHOLD(W)CURRENT
/AB	AB	Abstract	Word	S THRESHOLD(W)CURRENT/AB
/DE	DE	Descriptor[1]	Word & Phrase	S FIBRE?(N)OPTIC?/DE S OPTICAL FIBRES/DE
/ID	ID	Identifier[2]	Word & Phrase	S GAALAS/ID S INGAAS-GAALAS/ID
/TI	TI	Title	Word	S QUANTUM(W)WELL(S)LASER?/TI

[1] Also /DF.
[2] Also /IF.

ADDITIONAL INDEXES

SEARCH PREFIX	DISPLAY CODE	FIELD NAME	INDEXING	SELECT EXAMPLES
AC=	AC	Patent Application Country [3]	Word	S AC=JP
AD=	AD	Patent Application Date [3]	Phrase	S AD=710402
AN=	AN	Patent Application Number [3]	Phrase	S AN=20162
AU=	AU	Author	Phrase	S AU=OLSSON, N.A.
—	AZ	DIALOG Accession Number		
AZ=	AZ	INSPEC Abstract Number	Phrase	S AZ=A90052690
BN=	BN	International Standard Book Number (ISBN)	Phrase	S BN=0 8186 1986 4 S BN=0818619864
CC=	CC	Classification Code	Phrase	S CC=A4260B S CC=A42
—	CF	Conference Information		
CL=	CL	Conference Location	Word	S CL=(SANTA(W)CLARA)
CN=	CN	Classification Name	Word & Phrase	S CN=(LASING(W)ACTION) S CN=OPTICAL WAVEGUIDES
CO=	CO	CODEN	Phrase	S CO=APPLAB
CP=	CP	Country of Publication	Word & Phrase	S CP=USA S CP=WEST GERMANY
CS=	CS	Corporate Source	Word	S CS=(AT(W)T(S)MURRAY(W)HILL)
CT=	CT	Conference Title	Word	S CT=(COMPUTER(W)AIDED(W)DESIGN)
CY=	CY	Conference Year	Phrase	S CY=1990
DN=	DN	Document Number	Phrase	S DN=0038-1101(96)00038-X
DT=	DT	Document Type	Phrase	S DT=JOURNAL PAPER S DT=JP
IC=	IC	ANSI Z39.56 Serial Item Contribution Identifier (SICI) Code	Phrase	S IC="0038-11(199609)39:9L.1359:HFCM"?
JN=	JN	Journal Name	Phrase	S JN=APPLIED PHYSICS LETTERS S JN=APPL. PHYS. LETT. (USA)
LA=	LA	Language	Phrase	S LA=FRENCH
—	MI	Material Itentity Number		
—	NI	Numeric Information	Phrase	S NI=ELECTRICAL CONDUCTIVITY
PA=	PA	Patent Assignee [3]	Word & Phrase	S PA=PIONEER S PA=PIONEER ELECTRONIC?
PC=	PC	Patent Country [3]	Word	S PC=GB
PD=	PD	Patent Date [3]	Phrase	S PD=720329
—	PI	Patent Information [3]		
PN=	PN	Patent Number [3]	Phrase	S PN=GB 1379306
PU=	PU	Publisher [4]	Word	S PU=(IEEE AND WASHINGTON)
PY=	PY	Publication Year	Phrase	S PY=1989:1990
RN=	RN	Report or Contract Number	Word & Phrase	S RN=CERN S RN="CERN/SPS/ACC/79-13" S RN=CERNSPSACC7913
SF=	AZ	Subfile	Phrase	S SF=A
SN=	SN	International Standard Serial Number (ISSN)	Phrase	S SN=0003-6951 S SN=00036951
SO=	SO	Source Information [5]	Word	S SO=APPL?(W)PHYS?)
SP=	SP	Conference Sponsor	Word	S SP=(ACM AND IEEE)
TC=	TC	Treatment Code	Phrase	S TC=EXPERIMENTAL S TC=X
UD=	—	Update [6]	Phrase	S UD=9001B1:9999
UR=	UR	Uniform Resource Locator (URL)	Phrase	S UR=HTTP//ENGINE.IEEE?
CHEMICAL INDEXING FIELDS (available since January 1987)				
CI=	CI	Substance (including role modifier) [7]	Word & Phrase	S CI=GAAS S CI=(GA(S)AS(S)INT) S CI=AS BIN S CI=SS

ADDITIONAL INDEXES (cont'd)

SEARCH PREFIX	DISPLAY CODE	FIELD NAME	INDEXING	SELECT EXAMPLES
NE=	NE	Number of elements in Substance, Component, or Material System	Phrase	S NE=3(S)CI=(GA(S)AL(S)AS)
NUMERICAL INDEXING FIELDS (available since January 1987)[8,9]				
HI=	NI	Highest Value	Numeric	S HI=2.5E4(S)NI=FREQUENCY S HI<=9.7E-7(S)NI=WAVELENGTH
LO=	NI	Lowest Value	Numeric	S LO=100(S)NI=TEMPERATURE S LO>=3.16E7(S)NI=AGE
NUMERICAL INDEXING FIELDS (available since January 1987)[10]				
AG=	NI	Age (yr; Year)	Numeric	S AG>=1E9
AL=	NI	Altitude (m; Meter)	Numeric	S AL=2E4:9E5
AP=	NI	Apparent Power (VA; Volt-amp)	Numeric	S AP=3E6
BI=	NI	Bit Rate (Bit/s; Bits per Second)	Numeric	S BI=64000
BW=	NI	Bandwidth (Hz; Hertz)	Numeric	S BW=5E7
BY=	NI	Byte Rate (Byte/s; Bytes per Second)	Numeric	S BY=2.5E6
CA=	NI	Capacitance (F; Farad)	Numeric	S CA=2E-13
CD=	NI	Conductance (S; Seimen)	Numeric	S CD=2:5
CE=	NI	Computer Execution Rate (IPS; Instructions per Second)	Numeric	S CE>=1E6
CM=	NI	Computer Speed (FLOPS)	Numeric	S CM>=3.5E6
CU=	NI	Current (A; Ampere)	Numeric	S CU=0.051
DI=	NI	Distance (m; Meter)	Numeric	S DI=0.002
DP=	NI	Depth (m; Meter)	Numeric	S DP=2E4:9E5
EF=	NI	Efficiency (Percent)	Numeric	S EF=60
EL=	NI	Electrical Conductivity (S/m; Siemen per Meter)	Numeric	S EL=7.0E4
EN=	NI	Energy (J; Joule)	Numeric	S EN=0.5
ER=	NI	Electrical Resistivity (ohmm; Ohm meter)	Numeric	S ER=1.7E-4 S ER=0.00017
EV=	NI	Electron Volt Energy (eV; Electron Volt)	Numeric	S EV=-0.5:0
FR=	NI	Frequency (Hz; Hertz)	Numeric	S FR=0:1
GA=	NI	Gain (dB; Decibel)	Numeric	S GA=14
GD=	NI	Galactic Distance (pc; Parsec)	Numeric	S GD>=1E7
GE=	NI	Geocentric Distance (m; Meter)	Numeric	S GE=>3.7E10
HD=	NI	Heliocentric Distance (AU; Astronomical Unit)	Numeric	S HD=5E4
LS=	NI	Loss (dB; Decibel)	Numeric	S LS=-60:0
MA=	NI	Mass (kg; Kilogram)	Numeric	S MA=6E14
MD=	NI	Magnetic Flux Density (T; Tesla)	Numeric	S MD=1E-2
MS=	NI	Memory Size (Byte)	Numeric	S MS>=3E7
NF=	NI	Noise Figure (dB; Decibel)	Numeric	S NF=1:2
PO=	PO	Power (W; Watt)	Numeric	S PO=4E-5:2E-4
PR=	NI	Pressure (Pa; Pascal)	Numeric	S PR=1.3E-3
PS=	NI	Printer Speed (cps; Characters per Second)	Numeric	S PS>=2E2
PX=	NI	Picture Size (pixel; Picture Element)	Numeric	S PX=512
RA=	NI	Radiation Absorbed Dose (Gy; Gray)	Numeric	S RA=2
RD=	NI	Radiation Dose Equivalent (Sv; Sievert)	Numeric	S RD=1E-6:1E-2
RE=	NI	Resistance (ohm)	Numeric	S RE=7E-5:0.1
RP=	NI	Reactive Power (VAr; Volt-Amp Reactive)	Numeric	S RP=1E5
RX=	NI	Radiation Exposure (C/kg; Coulomb per Kilogram)	Numeric	S RX<=0.1
RY=	NI	Radioactivity (Bq; Becquerel)	Numeric	S RY=1E8:1E12
SI=	NI	Size (m; Meter)	Numeric	S SI=0.7:15
SM=	NI	Stellar Mass (Msol; Solar Mass)	Numeric	S SM=1E-2:3000
SR=	NI	Storage Capacity (Bit)	Numeric	S SR=4.2E6
TE=	NI	Temperature (K; Kelvin)	Numeric	S TE=3.26E2
TM=	NI	Time (s; Second)	Numeric	S TM=2E-11:4E-11
VE=	NI	Velocity (m/s; Meters per Second)	Numeric	S VE=-5E4:-2E2
VO=	NI	Voltage (V; Volt)	Numeric	S VO>=1000
WA=	NI	Wavelength (m; Meter)	Numeric	S WA=8.8E-7:1E-1
WL=	NI	Word Length (Bit)	Numeric	S WL=32

[3] Files 2 and 3 only; dates of patent coverage are 1969-1976.

[4] Available for conference proceedings and books only.

[5] Search field includes journal title words and volume and issue numbers. Display varies depending on document type.

[6] Not available in File 213.

[7] Role modifiers include: EL (element), DOP (dopant), BIN (binary system) SS (system with 3 or more components), INT (interface system), SUR (surface or substrate), ADS (adsorbate, or any sorbate, i.e., species being adsorbed onto a substrate).

[8] Numeric data for each physical quantity (temperature, pressure, frequency, etc.) are indexed into a separate numeric field (TE=, PR=, FR=, etc.). In the record display, numeric values appear in an exponential floating point format, e.g., FR=2.5E04.

[9] Truncation is not allowed when searching numeric data. Range searching is recommended for best results, e.g., S FR=25000:30000. The smallest and largest numbers that may be searched are 5.4E-79 and 7.2E+75. For specifying precise minimum or maximum numeric values, the LO= and HI= search prefixes may be used. LO= and HI= are generic prefixes not specific to any physical quantity. Searches using LO= and HI= should be qualified with the addition of the desired physical quantity using the NI= prefix.

[10] Each physical quantity and its corresponding abbreviated unit of measure are optionally searchable using NI=.

SPECIAL FEATURES

For command descriptions, enter HELP LIMIT, HELP SORT, HELP RANK, HELP DUP, HELP CURRENT online.

LIMIT	**/ART** (Journal Article) **/ENG** (English Language) **/NAR** (Non-Journal Article) **/NONENG** (Non-English Language) **/PHYS** (Physics Subfile) **/TECH** (Electronics, Computing, and Information Technology Subfiles) **/YYYY** (Publication Year)	S S2/ART S S9/ENG S AMPLIFIER?/NAR S LASERS/NONENG S SEMICONDUCTOR?/PHYS S HOLOGRAPHY/TECH S SUPERCONDUCTOR?/1989:1990
SORT	**AU, AZ, CC, CS, JN, PY, TI**	SORT S6/ALL/JN/PY,D PRINT S3/5/1-24/AU
RANK	All phrase- and numeric-indexed fields in the Additional Indexes can be ranked. Other RANK codes include: DE, ID	RANK DE RANK AU S4
RD, ID	Remove duplicates (RD) or identify duplicates (ID,IDO).	RD S5
CURRENT	Search only the most recent year plus one (CURRENT1) to five (CURRENT5) years.	B 2 CURRENT2

PREDEFINED FORMAT OPTIONS

NO.	DIALOGWEB FORMAT	RECORD CONTENT
1	--	DIALOG Accession Number
2	--	Full Record except Abstract
3	Medium	Bibliographic Citation
4	--	Full Record with Tagged Fields
5	--	Full Record
6	Short	Title and INSPEC Abstract Number
7	Long	Full Record except Indexing
8	Free	Title and Indexing
9	Full	Full Record
K	--	KWIC (Key Word In Context) displays a window of text; may be used alone or with other formats

OTHER OUTPUT OPTIONS

For an explanation, enter HELP TYPE, HELP UDF, HELP TAG online.

USER DEFINED FORMATS	Display codes listed in the Search Options table can be used to customize output.	TYPE S3/AU,TI,SO/1-5
TAG	Output can be displayed with tags identifying each display field.	TYPE S2/3,DE/1-5 TAG
DIRECT RECORD ACCESS	If the accession number of a specific record is known, it can be used to display the record directly.	TYPE 3603153/5 DISPLAY 3603153/5 PRINT 3603153/3

FOR ONLINE HELP:

See HELP FIELDS 2 for searchable fields; HELP FORMAT 2 for output formats; HELP LIMIT 2 for limits; HELP RATES 2 for cost information; HELP SORT 2 for sorts.


DIALOG