

CSA Technology Research Database

FILE DESCRIPTION

The **CSA Technology Research Database (TRD)** is a megafile of the technical bibliographic databases provided by CSA. TRD indexes and abstracts the literature of materials science, engineering, aerospace, and high technology. Literature indexed includes journal articles, conference papers, technical reports, books, monographs, standards, news briefs, and other document types as appropriate, from more than 3,000 serial and non-serial sources.

SUBJECT COVERAGE

- Metallurgy and materials science
- Civil engineering
- Mechanical engineering
- Aerospace engineering
- Automotive engineering
- Earthquake engineering
- Environmental engineering
- Computers and information systems
- Electronics and communications
- Condensed matter physics
- Forensic engineering
- Business and industry news
- Management issues

SOURCES

TRD includes the following Dialog databases:

- Aerospace & High Technology Database (File 108)
- Aluminium Industry Abstracts (File 33)
- ANTE: Abstracts in New Technologies and Engineering (File 60)
- Ceramic Abstracts/World Ceramics Abstracts (File 335)
- CSA / ASCE Civil Engineering Abstracts (File 61)
- Computer and Information Systems Abstracts (File 56)
- Copper Data Center Database*
- Corrosion Abstracts (File 46)
- Earthquake Engineering Abstracts (File 134)
- Electronics and Communications Abstracts (File 57)
- Engineered Materials Abstracts (File 293)
- Environmental Engineering Abstracts (File 64)
- Materials Business File (File 269)
- Mechanical and Transportation Engineering Abstracts (File 14)

METADEX (File 32)

- Solid State and Superconductivity Abstracts (File 68)
- WELDASEARCH (File 25)

*Not searchable as an individual database

TIPS

USE FILE 23

to search all CSA Technology Research databases.

USE FS=

to search selected file segments:
S FS=CORROSION? AND
FS=EARTHQUAKE?

USE SUBJECT HEADINGS or

SUBJECT HEADING CODES

to narrow a search to a topic.

S SH=POWDER TECHNOLOGY
S SC=P4

USE RANK

to find experts working in an area of interest.

S ANTIFOULING PAINT?
RANK AU

DIALOG FILE DATA

Inclusive Dates: 1963 to the present

Update Frequency:

Monthly (approx. 15,000-18,000 records per update)

File Size: More than 7 million records as of May 2005

CONTACT

The CSA Technology Research Database is produced by CSA. Questions concerning file content should be directed to:

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SAMPLE RECORD

DIALOG(R)File 23: CSA Technology Research
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AA= 0000015615 IP ACCESSION NO: 200504-32-11218; 200504-R.3-02477;
200504-84-09260

/TI Evidence of strong phonon-assisted resonant intervalley up-transfer for
electrons in type-II GaAs/AlAs superlattices

AU= Mu, X; Ding, Y J; Wang, Z; Salamo, G J

CS= Department of Electrical and Computer Engineering, Lehigh University, 19
Memorial Drive West, Bethlehem, PA 18015

JN=,SO= Proceedings of SPIE: Ultrafast Phenomena in Semiconductors and
Nanostructure Materials VIII, v SPIE Volume 5352, p 276-283

PD=,PY= PUBLICATION DATE: 2004

PU= PUBLISHER: SPIE - The International Society for Optical Engineering, 1000
20th Street, P.O. Box 10, Bellingham, WA, 98225

CP= COUNTRY OF PUBLICATION: USA

PUBLISHER URL: <http://www.spie.org>

PUBLISHER EMAIL: spie@spie.org

CONFERENCE:

CT= Ultrafast Phenomena in Semiconductors and Nanostructure Materials VIII, San
Jose, CA, USA, 26-29 Jan. 2004

DT= DOCUMENT TYPE: Conference Paper; Journal Article

LA= LANGUAGE: English

BN= ISBN: 0-8194-5260-2

NOTES: Graphs; Spectra; Numerical Data

NO. OF REFS.: 12

DOI: 10.1117/12.529066

FS= FILE SEGMENT: Metadex; Aluminium Industry Abstracts ; Solid State &
Superconductivity Abstracts

ABSTRACT:

/AB We demonstrate that longitudinal-optical (LO) phonons efficiently pump
electrons from the quasi-X states to the quasi-I states in short-period
type-II GaAs/AlAs superlattices. At a very low temperature, the
phonon-assisted electron uptransfer can occur if the energy difference
between the lowest quasi-I states and quasi-X states is equal to or less
than the LO phonon energies. As the temperature increases, however, kinetic
energies of the electrons can facilitate the electron up-transfer. As a
result, we have observed peculiar behaviors on these superlattices. First,
photoluminescence intensity for the quasi-direct transition drastically
increases as the temperature or pump power increases. Second, the
dependence of the integrated photoluminescence intensity on the pump power
exhibits a square power law.

/DE DESCRIPTORS: Gallium arsenides; Kinetic energy; Nanostructure; Phonons;
Photoluminescence; Semiconductors; Superlattices; Transition

SC=,SH,SH= SUBJ CATG: 32, Physical Properties; R.3, Physical Properties; 84,
Applications

SEARCH OPTIONS

BASIC INDEX

SEARCH SUFFIX	DISPLAY CODE	FIELD NAME	INDEXING	SELECT EXAMPLES
—	—	All Basic Index Fields	Word	S UP(W)TRANSFER
/AB	AB	Abstract	Word	S LOW(W)TEMPERATURE/AB
/DE	DE	Descriptor ¹	Word & Phrase	S GALLIUM(W)ARSENIDES/DE
/ID	ID	Identifier	Word & Phrase	S KINETIC ENERGY?/DE
/SH	SH	Subject Category Text ²	Word	S EXTRUSION/ID
/TI	TI	Title	Word	S HEAT TRANSFER/ID
			Word	S PHYSICAL(W)PROPERTIES/SH
			Word	S INTERVALLEY(W)UP(W)TRANSFER/TI

¹ Also /DF.

² Searchable in the Basic Index and in the Additional Indexes.

ADDITIONAL INDEXES

SEARCH PREFIX	DISPLAY CODE	FIELD NAME	INDEXING	SELECT EXAMPLES
AA=	AA	CSA Accession Number	Phrase	S AA=200504-32-11218
AU=	AU	Author	Phrase	S AU=MU, X?
—	AZ	DIALOG Accession Number		
BN=	BN	International Standard Book Number (ISBN)	Phrase	S BN=0-8194-5260-2
				S BN=0819452602
CD=	CD	Conference Date	Phrase	S CD=20040126
CL=	CL	Conference Location	Word	S CL=(SAN(W)JOSE)
CP=	CP	Country of Publication	Phrase	S CP=USA
				S CP=NEW ZEALAND
CS=	CS	Corporate Source	Word & Phrase	S CS=(ELECTRICAL(S)COMPUTER)
				S CS=DEPARTMENT OF ELECTRICAL?
CT=	CT	Conference Title	Word	S CT=(ULTRAFAST(W)PHENOMENA)
CY=	CY	Conference Year	Phrase	S CY=2004
DT=	DT	Document Type	Phrase	S DT=JOURNAL ARTICLE
FS=	FS	File Segment	Phrase	S FS=ALUMINIUM INDUSTRY ABSTRACTS
—	II	Digital Object Identifier		
JN=	JN	Journal Name	Phrase	S JN=PROCEEDINGS OF SPIE?
LA=	LA	Language	Phrase	S LA=GERMAN
MC=	MC	Materials Classification	Phrase	S MC=ALUMINUM BASE ALLOY?
ML=	ML	Materials	Phrase	S ML=AL-4CU
NO=	NO	Document Number	Word & Phrase	S NO=8356
				S NO="AD-A310 095/5/XAB"
—	NR	Number of References		
—	NT	Note		
PD=	PD	Publication Date	Phrase	S PD=20040000
PU=	PU	Publisher	Word	S PU=SPIE?
PY=	PY	Publication Year	Phrase	S PY=1992
RN=	RN	Report Number	Word & Phrase	S RN=5383
				S RN=SPIE VOLUME 5401
RT=	RT	Record Type	Phrase	S RT=ABSTRACT
SC=	SC	Subject Category	Phrase	S SC=32
SH=	SH	Subject Category Text ²	Phrase	S SH=PHYSICAL PROPERTIES
SN=	SN	International Standard Serial Number (ISSN)	Phrase	S SN=0883-2900
SO=	SO	Source Information	Word	S SO=(ULTRAFAST(W)PHENOMENA)
UD=	—	Update	Phrase	S UD=9999

SPECIAL FEATURES

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

LIMIT	/ABS -- Record has an Abstract /NOABS -- Record does not have an Abstract /YYYY -- Publication Year	S S1/ABS S S4/NOABS S S5/2004
SORT	AA, AU, CS, JN, PD, PY, TI	SORT S3/ALL/PY/D SORT S1/ALL/TI
RANK	All phrase- and numeric-indexed fields in the Additional Indexes can be ranked.	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 23 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 Publication Year
7	Long	Bibliographic Citation and Abstract
8	Free	Title, Indexing, and Publication Year
9	Full	Full Record

OTHER OUTPUT OPTIONS

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

USER DEFINED FORMATS	Display codes listed in the Search Options tables can be used to customize output.	TYPE S3/AU,TI/1-5 PRINT S2/TI,AB/ALL
TAG	Output can be displayed with tags identifying each display field.	TYPE S2/5/1-5 TAG PRINT S3/9/ALL TAG
DIRECT RECORD ACCESS	If the accession number of a specific record is known, it can be used to display the record directly.	TYPE 0726149/5 DISPLAY 0074483/AU,TI PRINT 0301964/9

FOR ONLINE HELP:

See HELP FIELDS 23 for searchable fields; HELP FORMAT 23 for output formats; HELP LIMIT 23 for limits; HELP RATES 23 for cost information; HELP SORT 23 for sorts.