

MECHENG

(MECHanical and Transportation ENGiNEering Abstracts)

- Subject Coverage**
- Agricultural and farm machinery
 - Aircraft and spacecraft
 - Automobiles, trucks, buses, and motorcycles
 - Boats and pleasure craft
 - Earthmoving and construction machinery
 - Electric and hybrid vehicles
 - Forensic engineering
 - Fuels and propellants
 - High speed trains, rapid transit railways, and monorails
 - Industrial materials handling machinery
 - Industrial robots and automation
 - Locomotives
 - Magnetic levitation railways
 - Management, marketing, and education
 - Mathematics and computation
 - Mechanical engineering for electric power generation
 - Mechanical engineering for industrial and manufacturing processes
 - Passenger, cargo, commercial, and military ships
 - Passenger, freight, and tank cars
 - Railroad rails and structures
 - Rockets and missiles
 - Satellites, probes, and space habitats
 - Shipbuilding
 - Sporting and recreational vehicles
 - Submarines and non-military submersibles
 - Tanks and armoured vehicles
 - Theoretical mechanics and dynamics

File Type Bibliographic

Features	Thesaurus	None			
	Alerts (SDIs)	Monthly			
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File Size 1,799,208 records (04/2011)

Coverage 1966-present

Updates Monthly

Language English

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- Sources**
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 - Books
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-

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 - STNGUIDE
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Search and Display Field Codes

Fields that allow left truncation are indicated by an asterisk (*).

General Search Fields

Search Field Name	Search Code	Search Examples	Display Codes
Basic Index* (contains single words from the abstract (AB), classification code (CC), controlled term (CT), title (TI) fields)	None or /BI	S EXPERIMENTAL STUDY S HIGH(L)ACCELERATION S ?MECHANISM?	AB, CC, CT, TI
Abstract	/AB	S STEEL/AB	AB
Accession Number	/AN	S 2004000021/AN	AN
Application Date (1)	/AD	S AD=JUNE 1993	AI
Application Year (1)	/AY	S AY=1993	AI
Author	/AU	S ANDERS ?/AU S ANDERS, B/AU	AU
Classification Code (code and text) (2)	/CC	S 23/CC S HYBRID VEHICLES/CC	CC
Controlled Term	/CT	S NATURAL GAS/CT	CT
Controlled Word	/CW	S NASA/CW	CT
Corporate Source (incl. author's affiliation) (2)	/CS	S DAIMLER BENZ/CS	CS
Data Entry Date (1,3)	/DED	S DED=JAN 1998	DED
Document Number	/DN	S 200403-30-0018/DN	DN
Document Type (code and text)	/DT (or /TC)	S BOOK/DT S B/DT	DT
E-mail Address (2)	/EML	S DAIMLERCHRYSLER/EML	EML, SO
Field Availability	/FA	S AB/FA	not displayed
File Segment (4)	/FS	S PRIORITY/FS	FS
International Standard (Document) Number	/ISN	S 0945-0084/ISN	ISN, SO
Journal Title (contains full and abbreviated titles)	/JT	S JOURNAL OF AIRCRAFT/JT	SO, JT, JTA, JTF
Language (ISO code and text)	/LA	S L1 NOT ENGLISH/LA	LA
Meeting Date (1,5)	/MD	S MD=JUNE 2003	MD, SO
Meeting Location (2,5)	/ML	S LISBON/ML	ML, SO
Meeting Title (5)	/MT	S CHALLENGING ENVIRONMENTS/MT	MT, SO
Meeting Year (2,5)	/MY	S 2002/MY	MY, SO
Note (2,4)	/NTE	S PAPER/NTE	NTE
Number of Report	/NR	S DOE/BP-257/NR	NR
Other Source	/OS	S POLLUTION ABSTRACTS/OS	OS
Patent Country (WIPO code and text)	/PC	S EP/PC S UNITED STATES/PC	
Patent Number (6)	/PN (or /PATS)	S EP194550/PN	PI
Publication Date (1)	/PD	S JAN 2001-MAY 2001/PD	PD, SO
Publication Year (1)	/PY	S PY>=2001	PY, SO
Publisher (2)	/PB	S SPRINGER VERLAG/PB	PB, SO
Reference Count (1)	/REC (or /RE.CNT)	S REC=5	REC, SO
Source (contains journal titles, other higher level titles, publisher and place of publication, meeting information, collation information (volume, issue, pages), ISSN, ISBN, reference count, and publication year, URL and email addresses)	/SO	S SOFTWARE ENGINEERING/SO S FRACTURE MECHANICS/SO AND 71/SO	SO

Search and Display Field Codes (cont'd)

Search Field Name	Search Code	Search Examples	Display Codes
Title Uniform Resource Locator (2) Update Date (1) Word Count, Title (1)	/TI /URL /UP (or /ED) /WC.T	S THREE DIMENSIONAL/TI S ACS/URL S UP=JUN 2004 S WC.T<10 AND L1	TI URL, SO UP WC.T

- (1) Numeric search field that may be searched using numeric operators or ranges.
 (2) Search with implied (S) proximity is available in this field.
 (3) Field is available until May 2005.
 (4) This field contains the coverage grade of the source publication (available until June 2005).
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 (6) Numbers are searchable in STN and Derwent format.

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Hit-term highlighting is available for all fields. Highlighting must be ON during SEARCH to use the HIT, KWIC, and OCC formats.

Format	Content	Examples
AB	Abstract	D TI AB
AI	Application Information	D AI
AN	Accession Number	D 1-5 AN
AU	Author	D AU TI
CC	Classification Code	D CC
CS	Corporate Source	D CS
CT	Controlled Term	D CT
DED (1)	Data Entry Date	D DED
DN	Document Number	D DN
DT (TC)	Document Type	D DT
EML (1)	E-mail Address	D EML
FS (1)	File Segment	D FS
JT (1)	Journal Title	D JT
JTA (1)	Journal Title, Abbreviated	D JTA
JTF (1)	Journal Title, Full	D JTF
LA	Language	D LA TI
MD (1,2)	Meeting Date	D MD
ML (1,2)	Meeting Location	D ML
MT (1,2)	Meeting Title	D MT
MY (1,2)	Meeting Year	D MY
NR	Number of Report	D NR
NTE	Note	D NTE
OS	Other Source	D OS
PB (1)	Publisher	D PB
PD (1)	Publication Date	D PD
PI	Patent Information	D PI
PY (1)	Publication Year	D PY
REC (RE.CNT) (1)	Reference Count	D REC
SO	Source	D SO

DISPLAY and PRINT Formats (cont'd)

Format	Content	Examples
TI UP (ED) (1) URL (1) WC.T (1)	Title Update Date Uniform Resource Locator Word Count, Title	D TI 1-3 D UP D URL D WC.T
ABS ALL DALL IALL BIB IBIB IND SCAN (3) TRIAL (TRI, SAMPLE, FREE)	AN, AB AN, DN, TI, AU, CS, SO, NR, DT, PI, AI, LA, SL, NTE, OS, AB, CC, CT ALL, with delimiter for post-processing ALL, indented with text labels AN, DN, TI, AU, CS, SO, NR, PI, AI, DT, LA, SL, NTE, OS (BIB is the default) BIB, indented with text labels AN, CC, CT TI, CT (random display without answer numbers) AN, TI, CC, CT	D ABS D ALL D DALL D IALL D BIB D IBIB D IND D SCAN D TRI
HIT KWIC OCC	Hit term(s) and field(s) Up to 50 words before and after hit term(s) (KeyWord-In-Context) Number of occurrences of hit term(s) and field(s) in which they occur	D HIT D KWIC D OCC

(1) Custom display only.

(2) Field available since June 2005.

(3) SCAN must be specified on the command line, i.e., D SCAN or DISPLAY SCAN.

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The ANALYZE command is used to create an L-number containing terms taken from the specified field in an answer set.

The SORT command is used to rearrange the search results in either alphabetic or numeric order of the specified field(s).

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
Abstract	AB	Y	N
Application Date	AD	Y	Y
Accession Number	AN	Y	N
Author	AU	Y	Y
Application Year	AY	Y	Y
Classification Code	CC	Y	Y
Citation	CIT (RE)	Y (2,3)	N
Corporate Source	CS	Y	Y
Controlled Term	CT	Y	N
Data Entry Date	DED	Y	Y
Document Number	DN	Y	N
Document Type	DT (TC)	Y	Y
E-mail Address	EML	Y	Y
File Segment	FS	Y	Y

SELECT, ANALYZE, and SORT Fields (cont'd)

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
International Standard Book Number	ISBN	N	Y
International Standard (Document) Number	ISN	Y (4)	Y
International Standard Serial Number	ISSN	N	Y
Journal Title	JT	Y	Y
Journal Title, Abbreviated	JTA	Y (5)	Y
Journal Title, Full	JTF	Y (5)	Y
Language	LA	Y	Y
Meeting Date	MD	Y	Y
Meeting Location	ML	Y	Y
Meeting Title	MT	Y	Y
Meeting Year	MY	Y	Y
Number of Report	NR	Y	Y
Note	NTE	Y	Y
Occurrence Count of Hit Terms	OCC	N	Y
Other Source	OS	Y	Y
Publisher	PB	Y	Y
Publication Date	PD	Y	Y
Patent Number	PN (PI, PATS)	Y	Y
Publication Year	PY	Y	Y
Reference Count	REC (RE.CNT)	Y	Y
Source	SO	Y (6)	Y
Title	TI	Y (default)	Y
Update Date	UP (ED)	Y	Y
Uniform Resource Locator	URL	Y	N
Word Count, Title	WC.T	Y	Y

- (1) HIT may be used to restrict terms extracted to terms that match the search expression used to create the answer set, e.g., SEL HIT CC.
- (2) SELECT or ANALYZE HIT are not valid with this field.
- (3) SELECT or ANALYZE CIT allows you to extract the reference from the source documents in this file and have them automatically converted to a citation format for searching in the SCISEARCH file. SEL or ANALYZE CIT extracts first author, publication year, volume, first page, with a truncation symbol and with /RE appended to the terms created by SELECT.
- (4) Selects or analyzes ISSN and ISBN with /ISN appended to the terms created by SELECT.
- (5) Appends /JT to the terms created by SELECT.
- (6) Selects or analyzes ISSN and ISBN with /SO appended to the terms created by SELECT.

Sample Records**DISPLAY ALL OF JOURNAL**

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AN 2010258597 MECHENG
DN 201005-62-1726416
TI Experimental study of flow fields in an airway closure model
AU BIAN, S.; TAI, C.-F.; HALPERN, D.; ZHENG, Y.; GROTBORG, J. B
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SO Journal of Fluid Mechanics, vol. 647, pp. 391-402, 25 Mar. 2010, 20100325
   Published by: Cambridge University Press, Edinburgh Bldg., Shaftesbury
   Rd., Cambridge, CB2 2RU, [information@cambridge.org],
   [http://www.cup.org/journals/jnlscat/flm/flm.html]
   ISSN: 0022-1120
DT Journal
LA English
OS Civil Engineering Abstracts; Aerospace & High Technology; Solid State &
   Superconductivity Abstracts
AB The liquid lining in small human airways can become unstable and form
   liquid plugs that close off the airways. Bench-top experiments have been
   performed in a glass capillary tube as a model airway to study the airway

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instability and the flow-induced stresses on the airway walls. A microscale particle image velocimetry system is used to visualize quantitatively the flow fields during the dynamic process of airway closure. An annular film is formed by injecting low-viscosity Si-oil into the glycerol-filled capillary tube. The viscosity ratio between these two fluids is similar to that between water and air. The thickness of the film varies with the infusion rate of the core fluid, which is controlled by a syringe pump. After a uniform film is formed, the syringe pump is shut off so that the core flow speed is close to zero during closure. Instantaneous velocity fields in the annular film at various stages of airway closure are computed from the images and analysed. The wall shear stress at the instant when a liquid plug forms is found to be approximately one order of magnitude higher than the exponential growth period before closure. Within the short time span of the closure process, there are large wall shear stress fluctuations. Furthermore, dramatic velocity changes in the film flow during closure indicate a steep normal stress gradient on the airway wall. The experimental results show that the wall shear stress during closure can be high enough to injure airway epithelial cells. An airway that experiences closure and reopening cyclically during breathing could be injured from fluid forces during both phases of the cycle (i.e. inspiration and expiration).

CC 62 Theoretical Mechanics and Dynamics
CT Airways; Fluid flow; Computational fluid dynamics; Liquids; Wall shear stresses; Fluids; Dynamical systems; Walls

DISPLAY IBIB OF CONFERENCE

ACCESSION NUMBER: 2005023087 MECHENG
DOCUMENT NUMBER: 200508-61-35322
TITLES: EXTENDED THERMAL CYCLE LIFETIME IN THERMAL BARRIER COATINGS WITH BOND COATS MADE FROM CRYOMILLED POWDERS
AUTHOR: Ajdelsztajn, Leonardo; Tang, Feng; Kim, George E; Provenzano, Virgil; Dallek, Steven; Schoenung, Julie M
CORPORATE SOURCE: Chemical English and Materials Science, University of California, Davis, CA 95616, USA
SOURCE: Surface Engineering in Materials Science III as held at the 2005 TMS Annual Meeting, pp. 229-239, 20050213, Numerical Data, Graphs, Photomicrographs, 16 reference
Conference: Surface Engineering in Materials Science III as held at the 2005 TMS Annual Meeting, San Francisco, CA, USA, 13-17 Feb. 2005
Published by: Minerals, Metals and Materials Society (TMS), 184 Thorn Hill Road, Warrendale, PA, 15086-7528, USA, [<http://www.tms.org>]
ISBN: 0873395905
DOCUMENT TYPE: Conference Article
LANGUAGE: English
OTHER SOURCE: Metadex; Ceramics Abstracts/World Ceramic Abstracts

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