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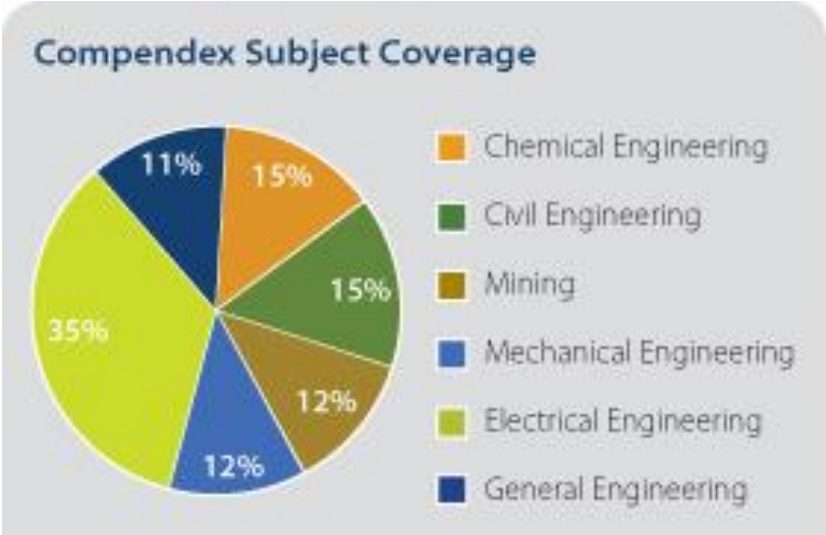

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Accession number (c, i, n, pc, el, ep, g, f)	AN	Major term as a reagent (el, ep)	CVMA
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Availability (n, cb, f)	AV	Numerical indexing (i)	NI
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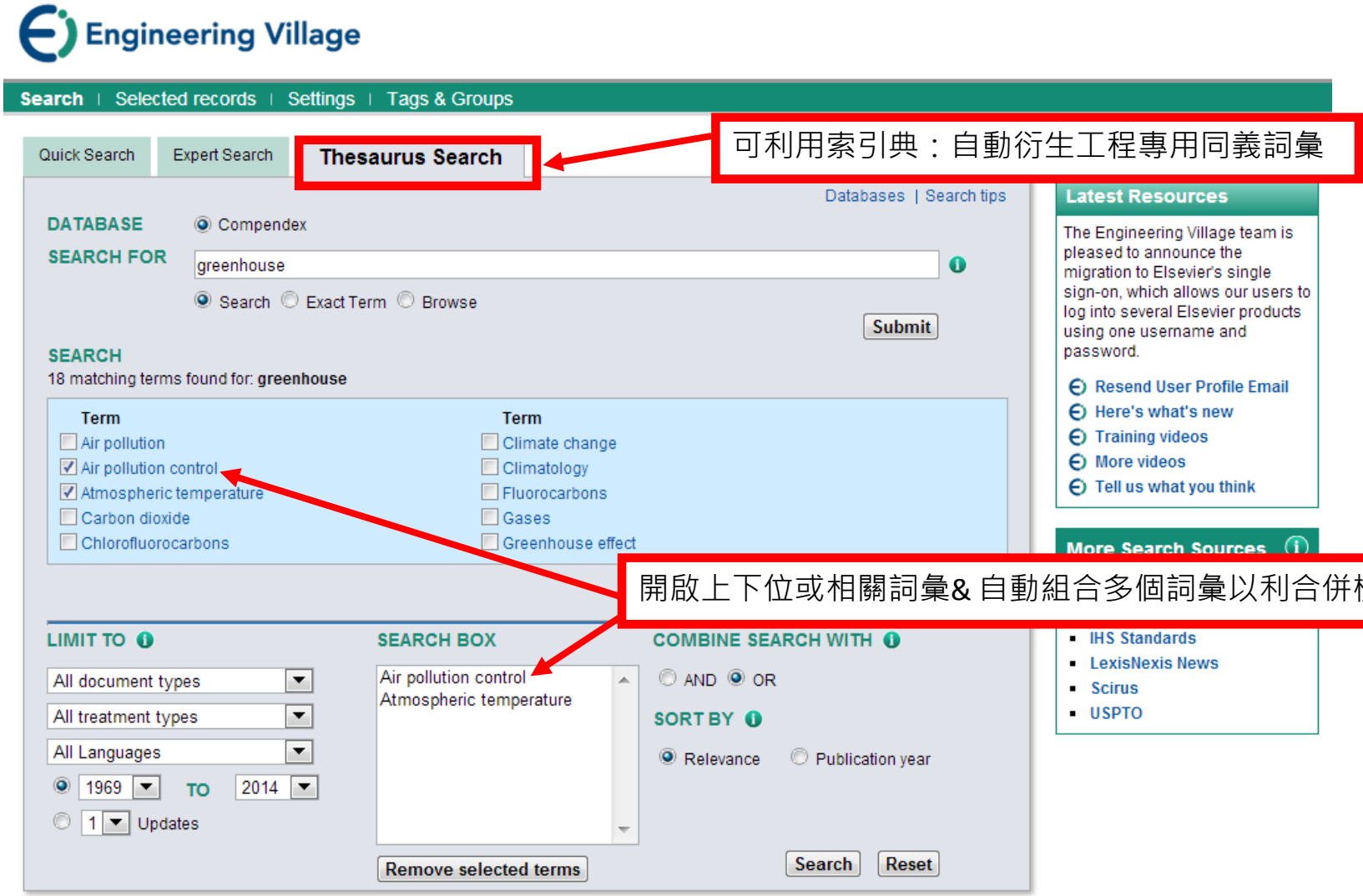

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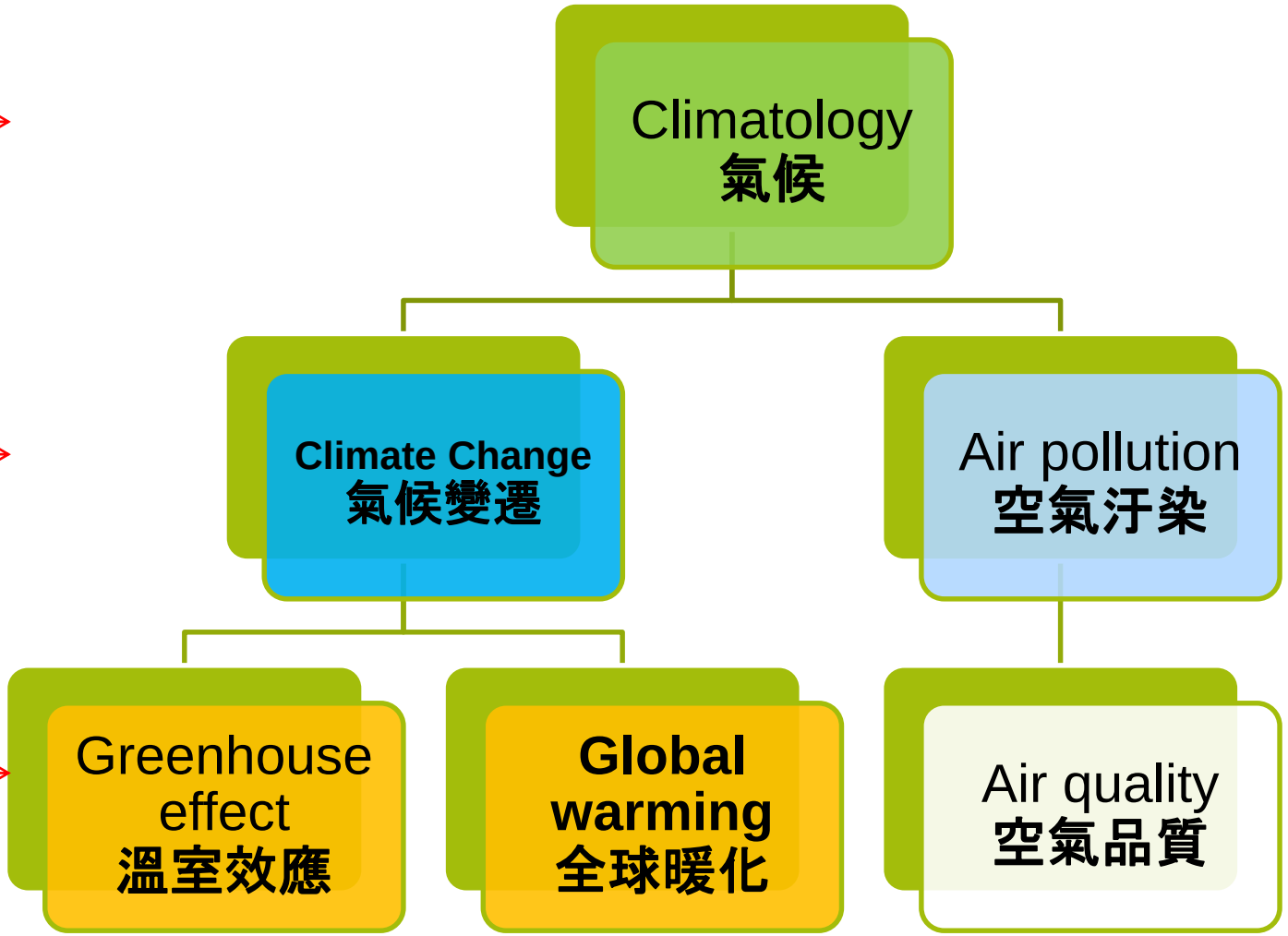

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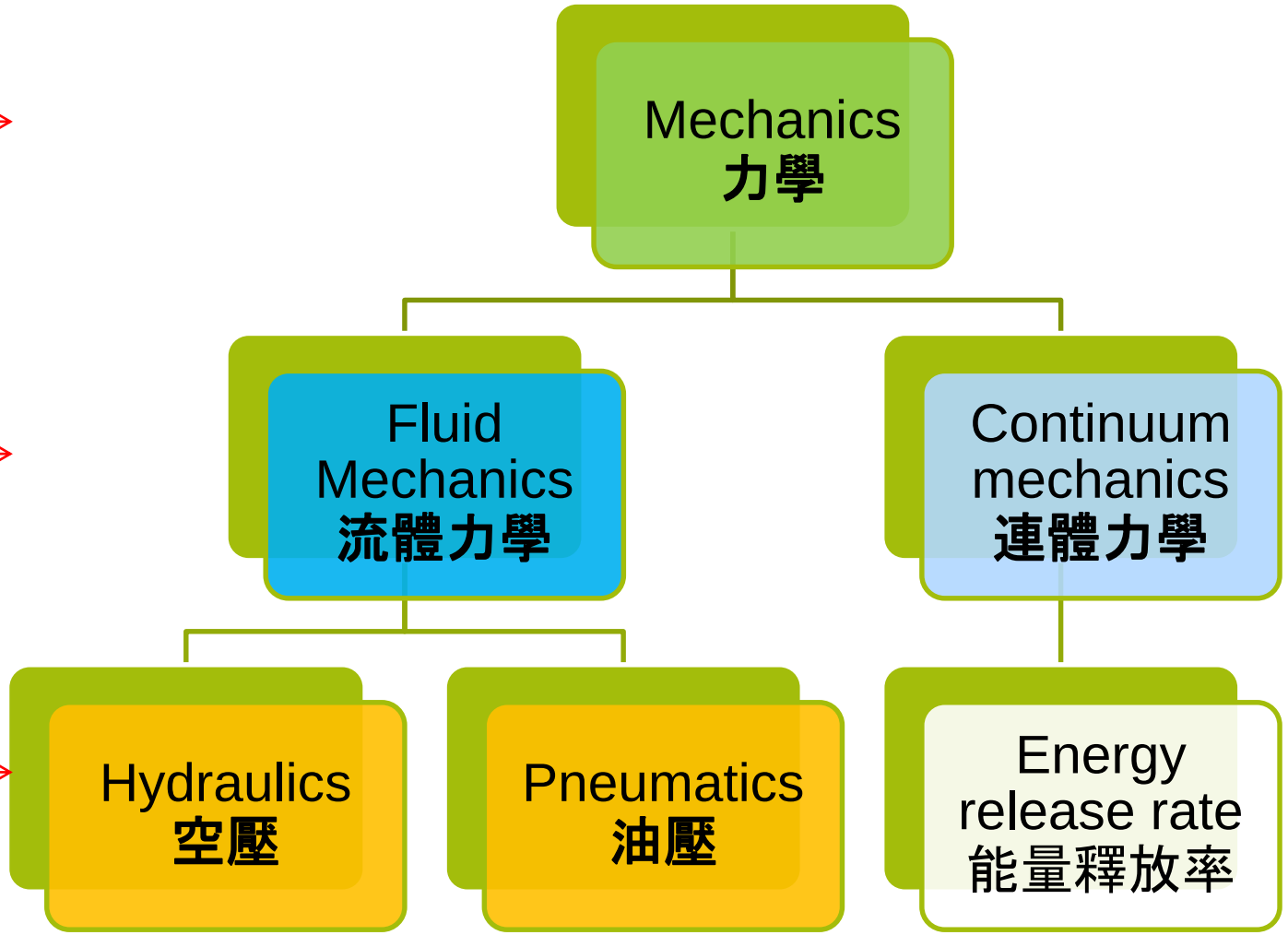

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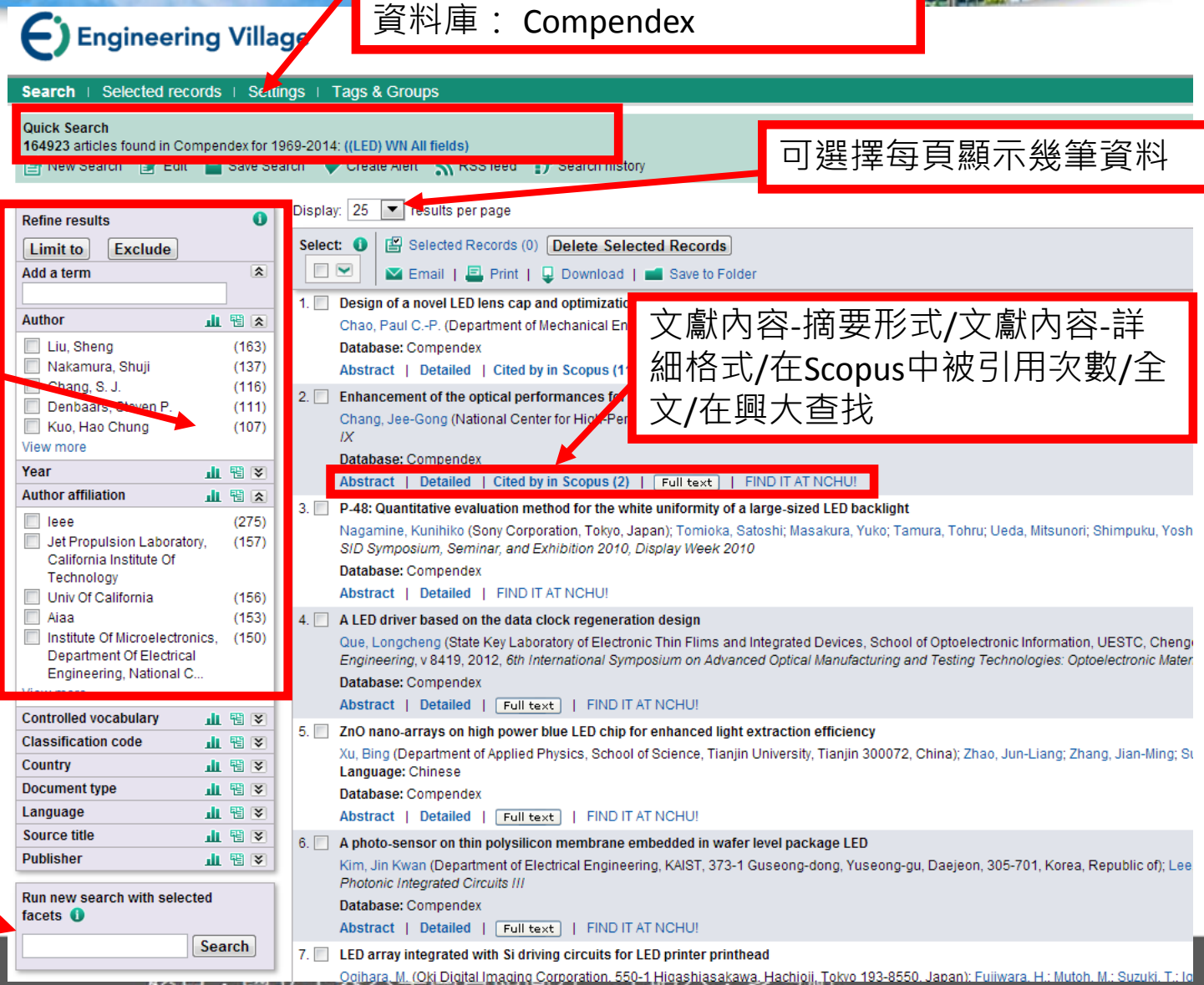

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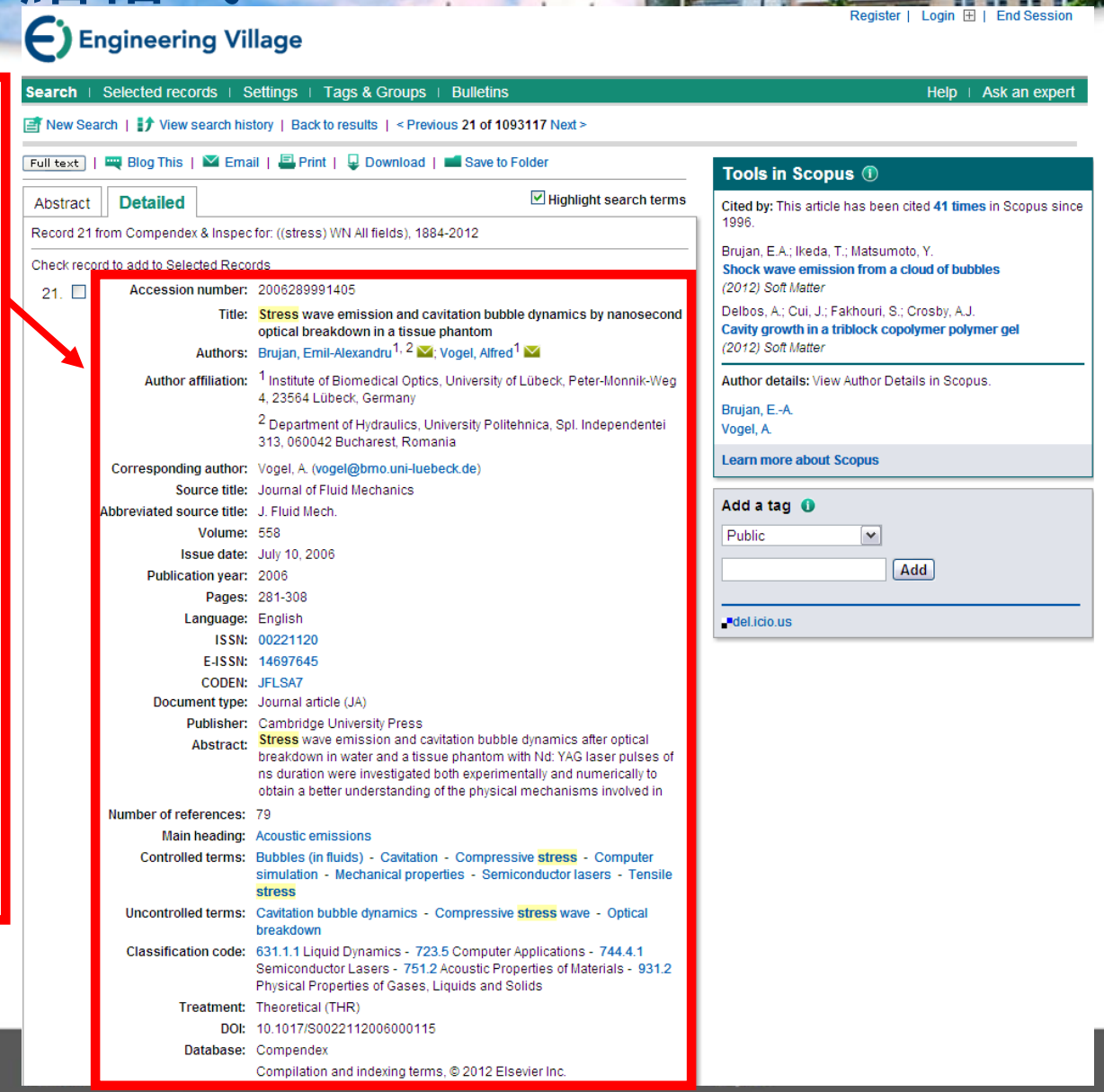

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21.

Accession number: 2006289991405

Title: Stress wave emission and cavitation bubble dynamics by nanosecond optical breakdown in a tissue phantom

Authors: Brujan, Emil-Alexandru[1, 2]; Vogel, Alfred[1]

Author affiliation: [1] Institute of Biomedical Optics, University of Lübeck, Peter-Monnik-Weg 4, 23564 Lübeck, Germany

[2] Department of Hydraulics, University Politehnica, Spl. Independentei 313, 060042 Bucharest, Romania

Corresponding author: Vogel, A. (vogel@bmo.uni-luebeck.de)

Source title: Journal of Fluid Mechanics

Abbreviated source title: J. Fluid Mech.

Volume: 558

Issue date: July 10, 2006

Publication year: 2006

Pages: 281-308

Language: English

ISSN: 00221120

E-ISSN: 14697645

CODEN: JFLSA7

Document type: Journal article (JA)

Publisher: Cambridge University Press

Abstract: Stress wave emission and cavitation bubble dynamics after optical breakdown in water and a tissue phantom with Nd: YAG laser pulses of ns duration were investigated both experimentally and numerically to obtain a better understanding of the physical mechanisms involved in

Number of references: 79

Main heading: Acoustic emissions

Controlled terms: Bubbles (in fluids) - Cavitation - Compressive stress - Computer simulation - Mechanical properties - Semiconductor lasers - Tensile stress

Uncontrolled terms: Cavitation bubble dynamics - Compressive stress wave - Optical breakdown

Classification code: 631.1.1 Liquid Dynamics - 723.5 Computer Applications - 744.4.1 Semiconductor Lasers - 751.2 Acoustic Properties of Materials - 931.2 Physical Properties of Gases, Liquids and Solids

Treatment: Theoretical (THR)

DOI: 10.1017/S0022112006000115

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Brujan, E.A.; Ikeda, T.; Matsumoto, Y.
Shock wave emission from a cloud of bubbles
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Chengyu Lee (Urban Constr. Coll., Wuhan Univ. of Sci. & Technol., Wuhan, China); Luo Lie; Guo Yao Jie **Source:** *Advanced Materials Research*, v 163-167, pt.3, p 1945-50, 2011
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3. Prediction of stress waves propagation in progressively loaded seven wire strands
Bartoli, I. (Dept. of Civil Archit. & Environ. Eng., Drexel Univ., Philadelphia, PA, United States); Castellazzi, G.; Marzani, A.; Salamone, S. **Source:** *Proceedings of the SPIE - The International Society for Optical Engineering*, v 8345, p 834505 (12 pp.), 2012
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4. Stress responses to large simple shear deformation in elasticity based on the logarithmic strain
Yang Lihong (Coll. of Aerosp. & Civil Eng., Harbin Eng. Univ., Harbin, China); Qu Jia; He Yunzeng **Source:** *Key Engineering Materials*, v 488-489, p 424-7, 2012

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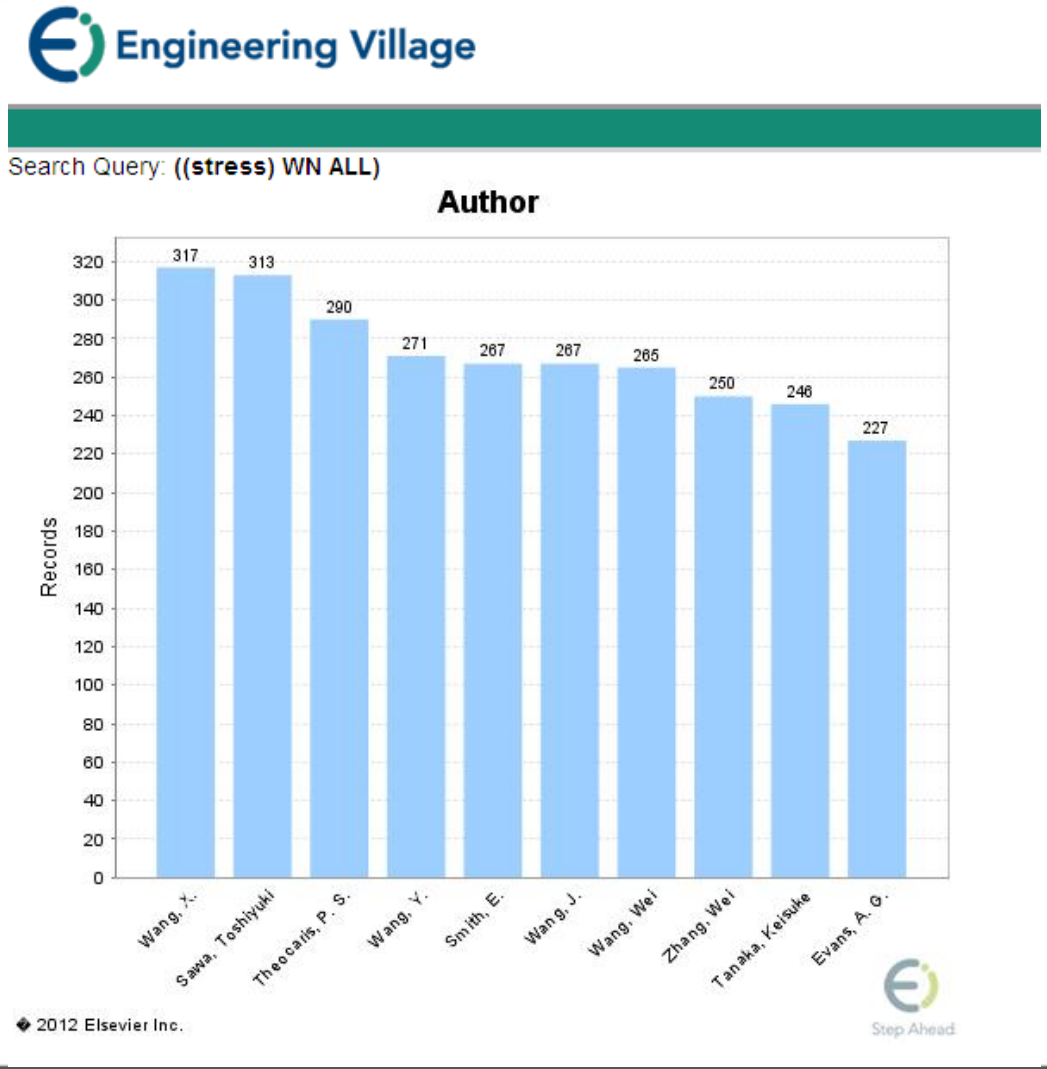

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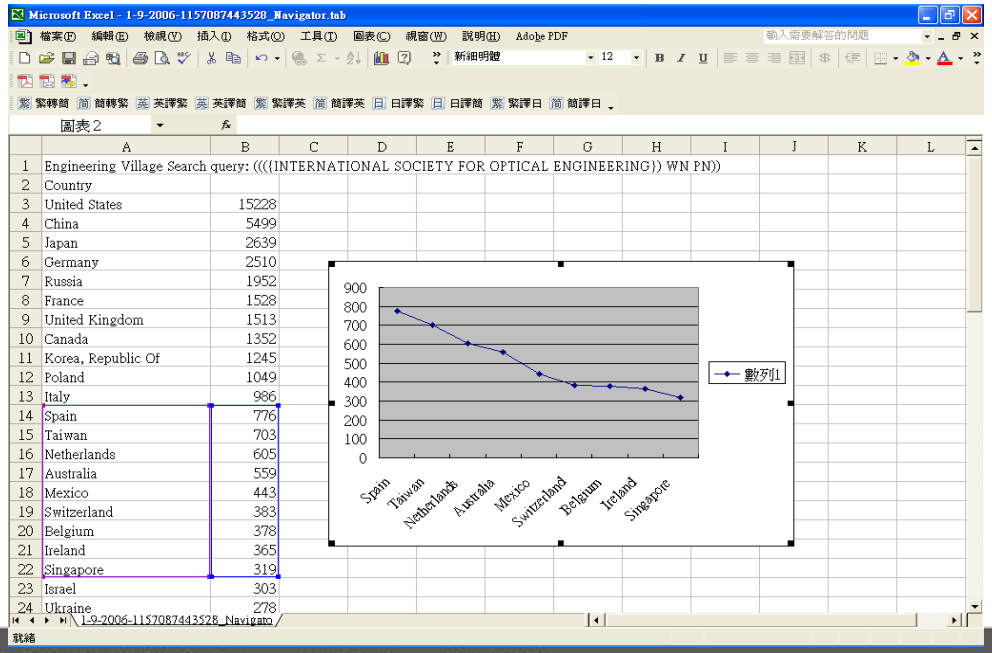

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Brujan, Emil-Alexandru[1, 2]; Vogel, Alfred[1]

Source: *Journal of Fluid Mechanics*, v 558, p 281-308, July 10, 2006; **ISSN:** 00221120, **E-ISSN:** 14697645; **DOI:** 10.1017/S0022112006000115; **Publisher:** Cambridge University Press

Author affiliations:

[1] Institute of Biomedical Optics, University of Lübeck, Peter-Monnik-Weg 4, 23564 Lübeck, Germany

[2] Department of Hydraulics, University Politehnica, Spl. Independentei 313, 060042 Bucharest, Romania

Abstract:

Stress wave emission and cavitation bubble dynamics after optical breakdown in water and a tissue phantom with Nd: YAG laser pulses of 6 ns duration were investigated both experimentally and numerically to obtain a better understanding of the physical mechanisms involved in plasma- as two orders of magnitude from the static values. The discovery of a tensile stress wave after optical breakdown in tissue-like media is of great importance for the assessment of collateral damage in laser surgery because biological tissues are much more susceptible to tensile stress than to compressive stress. © 2006 Cambridge University Press.(79 refs)

Main heading: Acoustic emissions

Controlled terms: Bubbles (in fluids) - Cavitation - Compressive stress - Computer simulation - Mechanical properties - Semiconductor lasers - Tensile stress

Uncontrolled terms: Cavitation bubble dynamics - Compressive stress wave - Optical breakdown

Classification Code: 631.1.1 Liquid Dynamics - 723.5 Computer Applications - 744.4.1 Semiconductor Lasers - 751.2 Acoustic Properties of Materials - 931.2 Physical Properties of Gases, Liquids and Solids

Treatment: Theoretical (THR)

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Brujan, E.A.; Ikeda, T.; Matsumoto, Y.
Shock wave emission from a cloud of bubbles
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Source: *Journal of Fluid Mechanics*, v 558, p 281-308, July 10, 2006 14697645; DOI: 10.1017/S0022112006000115; Publisher: Cambri

Author affiliations:

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[2] Department of Hydraulics, University Politehnica, Spl. Independen Romania

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21. **Stress wave emission and cavitation bubble dynamics by optical breakdown in a tissue phantom**

Brujan, Emil-Alexandru[1, 2]; Vogel, Alfred[1]

Source: *Journal of Fluid Mechanics*, v 558, p 281-308, July 10, 2006; **ISSN:** 0022 14697645; **DOI:** 10.1017/S0022112006000115; **Publisher:** Cambridge Universit

Author affiliations:

[1] Institute of Biomedical Optics, University of Lübeck, Peter-Monnik-Weg 4, 2356

[2] Department of Hydraulics, University Politehnica, Spl. Independentei 313, 0600 Romania

Abstract:

Stress wave emission and cavitation bubble dynamics after optical breakdown i phantom with Nd: YAG laser pulses of 6 ns duration were investigated both exper numerically to obtain a better understanding of the physical mechanisms involve as two orders of magnitude from the static values. The discovery of a tensile **stre** breakdown in tissue-like media is of great importance for the assessment of coll laser surgery because biological tissues are much more susceptible to tensile **s** compressive **stress**. © 2006 Cambridge University Press.(79 refs)

Main heading: Acoustic emissions

Controlled terms: Bubbles (in fluids) - Cavitation - Compressive **stress** - Con Mechanical properties - Semiconductor lasers - Tensile **stress**

Uncontrolled terms: Cavitation bubble dynamics - Compressive **stress** wave -

Classification Code: 631.1.1 Liquid Dynamics - 723.5 Computer Applications - Semiconductor Lasers - 751.2 Acoustic Properties of Materials - 931.2 Physical Liquids and Solids

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From stress-induced fluidization processes to Herschel-Bulkley behaviour in simple yield stress fluids

Divoux, Thibaut[1]; Barentin, Catherine[2]; Manneville, Sébastien[1] **Source:** *Soft Matter*, v 7, n 18, p 8409-8418, September 21, 2011; **ISSN:** 1744683X, **E-ISSN:** 17446848; **DOI:** 10.1039/c1sm05607g; **Publisher:** Royal Society of Chemistry

Author affiliation:

1 Université de Lyon, Laboratoire de Physique, École Normale Supérieure de Lyon, 46 Allée d'Italie 69364, Lyon cedex 07, France

2 Laboratoire de Physique de la Matière Condensée et Nanostructures, Université de Lyon, Université Claude Bernard Lyon i, 43 Boulevard du 11 Novembre 1918, 69622, Villeurbanne cedex, France

Abstract: Stress-induced fluidization of a simple yield stress fluid, namely a carbopol microgel, is addressed through extensive rheological measurements coupled to simultaneous temporally and spatially resolved velocimetry. These combined measurements allow us to rule out any bulk fracture-like scenario during the fluidization process such as that suggested in [Caton et al., Rheol Acta, 2008, 47, 601-607]. On the contrary, we observe that the transient regime from solid-like to liquid-like behaviour under a constant shear stress σ successively involves creep deformation, total wall slip, and shear banding before a homogeneous steady state is reached. Interestingly, the total duration τf of this fluidization process scales as $\tau_f \propto 1/(\sigma - \sigma_c)^{\beta}$, where σc stands for the yield stress of the microgel, and β is an exponent which only depends on the microgel properties and not on the gap width or on the boundary conditions. Together with recent experiments under imposed shear rate [Divoux et al., Phys. Rev. Lett., 2010, 104, 208301], this scaling law suggests a route to rationalize the phenomenological Herschel-Bulkley (HB) power-law classically used to describe the steady-state rheology of simple yield stress fluids. In particular, we show that the steady-state HB exponent appears as the ratio of the two fluidization exponents extracted separately from the transient fluidization processes respectively under controlled shear rate and under controlled shear stress. © 2011 The Royal Society of Chemistry. (49 refs.)

Main Heading: Yield stress

Controlled terms: Creep - Fluidization - Fluids - Gels - Process control - Rheology - Shear deformation - Shear stress

Uncontrolled terms: Carbopol - Constant shear - Creep deformations - Gap widths - Herschel-Bulkley - Microgel - Power-law - Rheological measurements - Shear banding - Spatially resolved - Steady state - Stress-induced - Transient regime - Wall slip - Yield stress fluids

Classification Code: 421 Strength of Building Materials; Mechanical Properties - 631 Fluid Flow - 631.1 Fluid Flow, General - 731 Automatic Control Principles and Applications - 802.3 Chemical Operations - 804 Chemical Products Generally

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Shock wave emission from a cloud of bubbles
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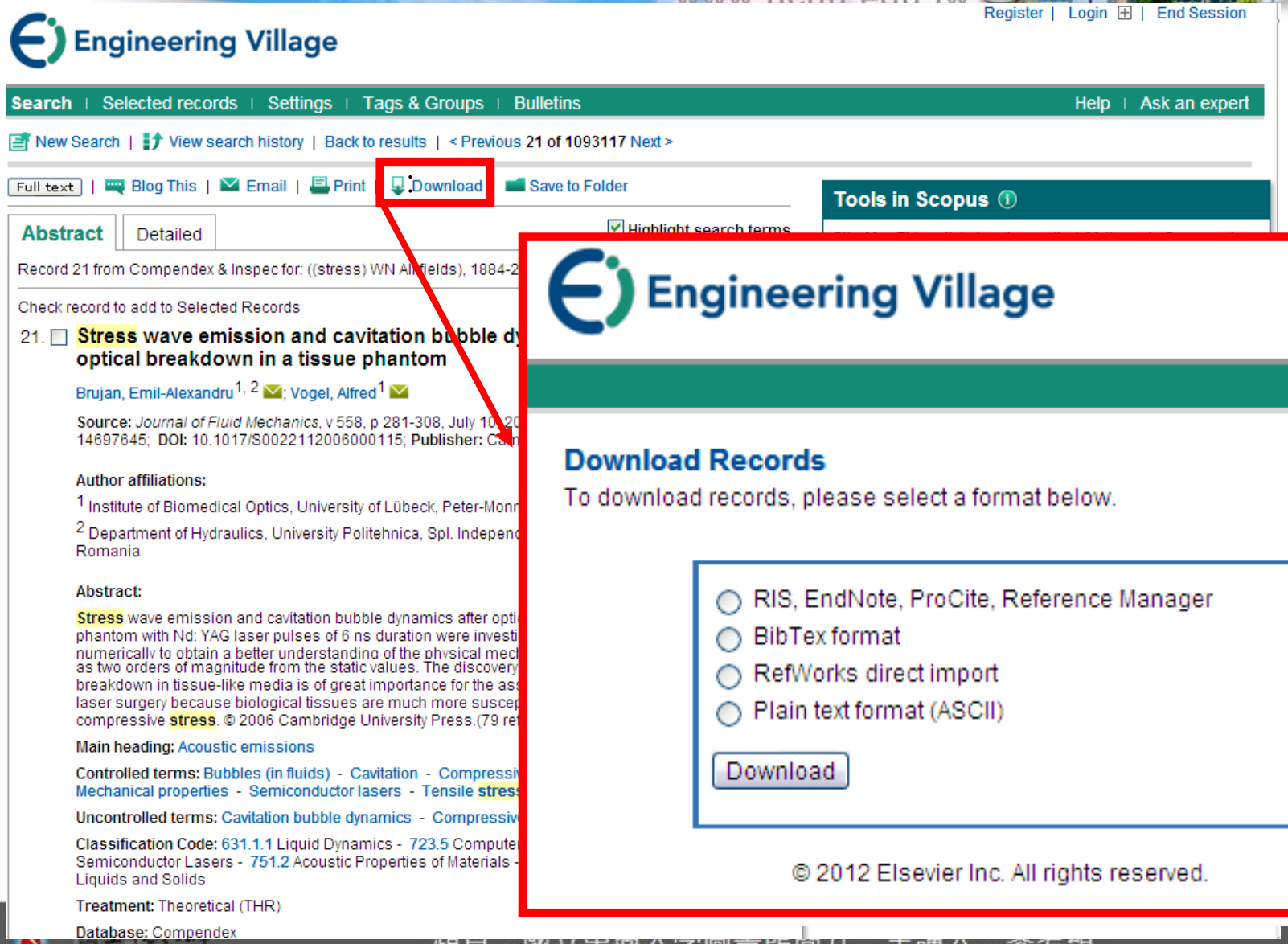

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Brujan, Emil-Alexandru[1, 2]; Vogel, Alfred[1]

Source: *Journal of Fluid Mechanics*, v 558, p 281-308, July 10, 2006; **ISSN:** 14697645; **DOI:** 10.1017/S0022112006000115; **Publisher:** Cambridge Uni

Author affiliations:

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[2] Department of Hydraulics, University Politehnica, Spl. Romania

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Main heading: Acoustic emissions

Controlled terms: Bubbles (in fluids) - Cavitation - Co Mechanical properties - Semiconductor lasers - Tens

Uncontrolled terms: Cavitation bubble dynamics - Co

Classification Code: 631.1.1 Liquid Dynamics - 723.5 Semiconductor Lasers - 751.2 Acoustic Properties of M Liquids and Solids

Treatment: Theoretical (THR)

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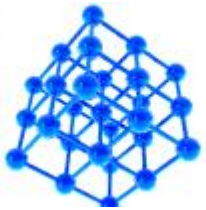


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[2] Laboratoire de Physique de la Matière Condensée et Nanostructures, Université de Lyon, Université Claude Bernard Lyon i, 43 Boulevard du 11 Novembre 1918, 69622, Villeurbanne cedex, France

Abstract:

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