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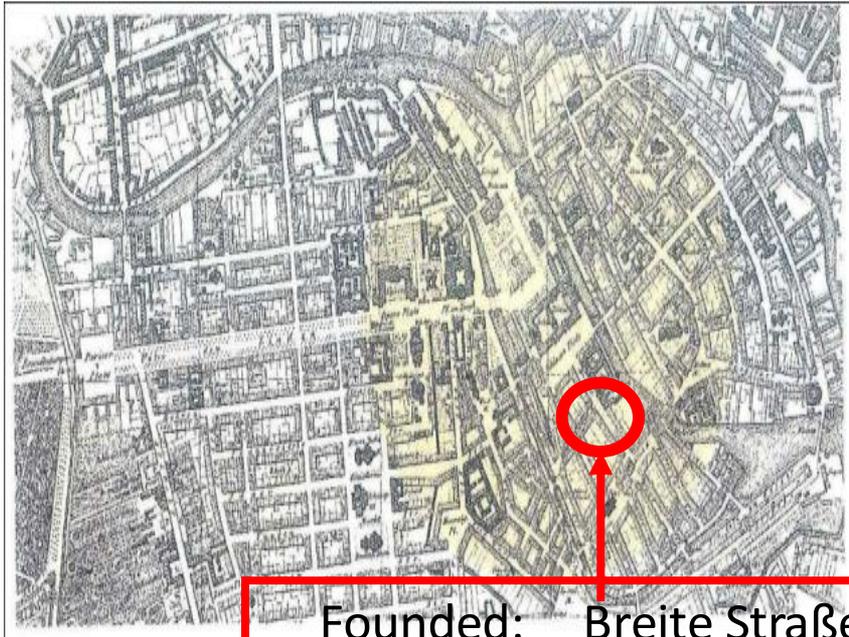
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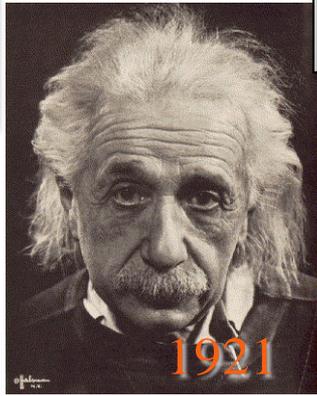
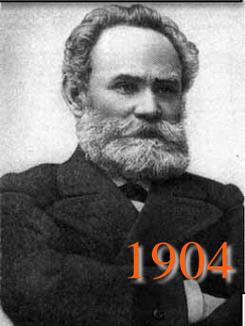
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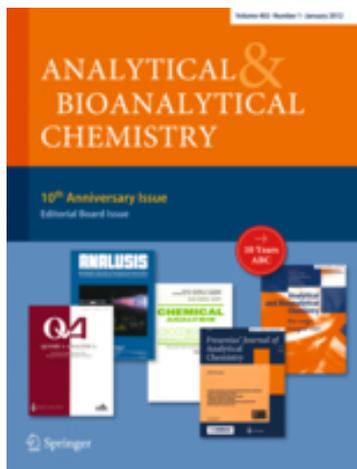
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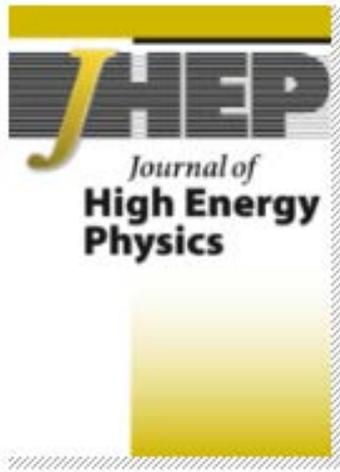
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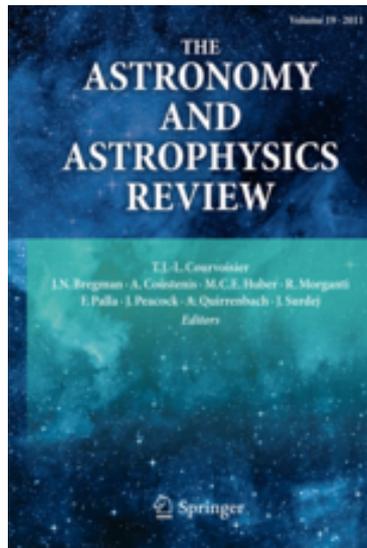
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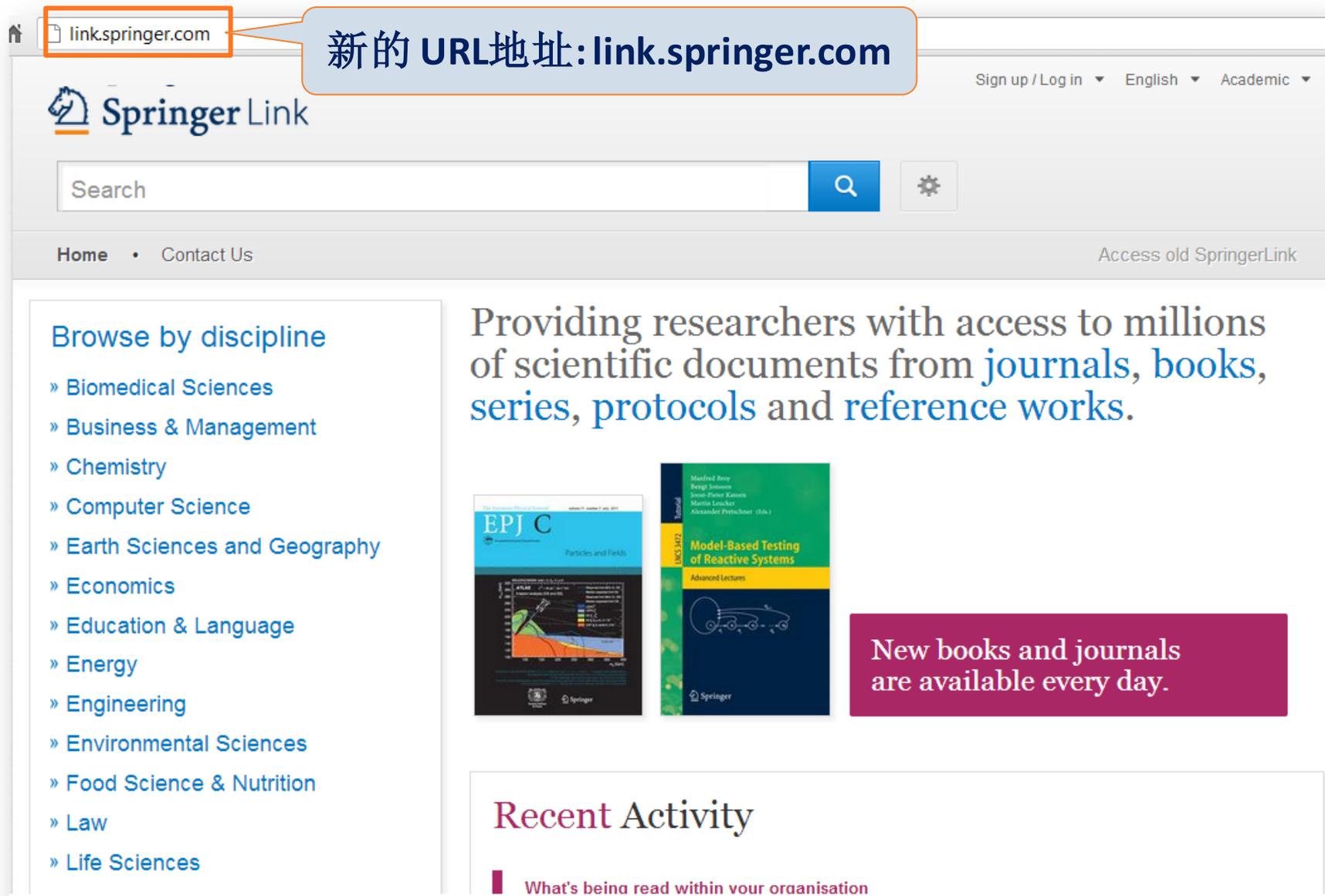
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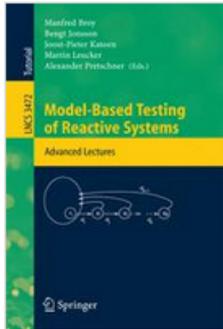
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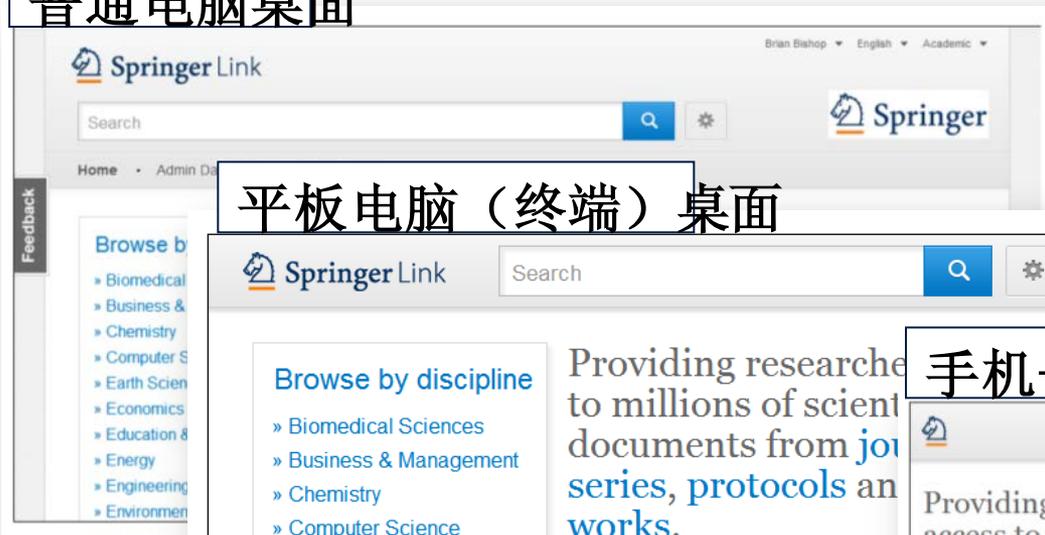
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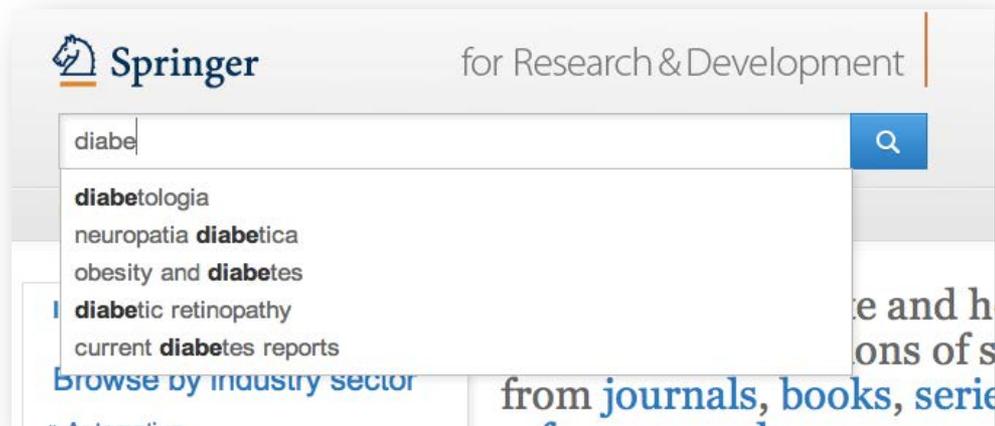
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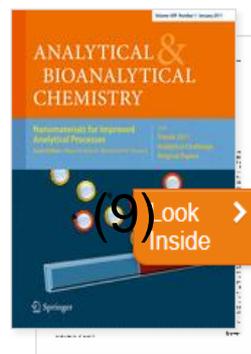
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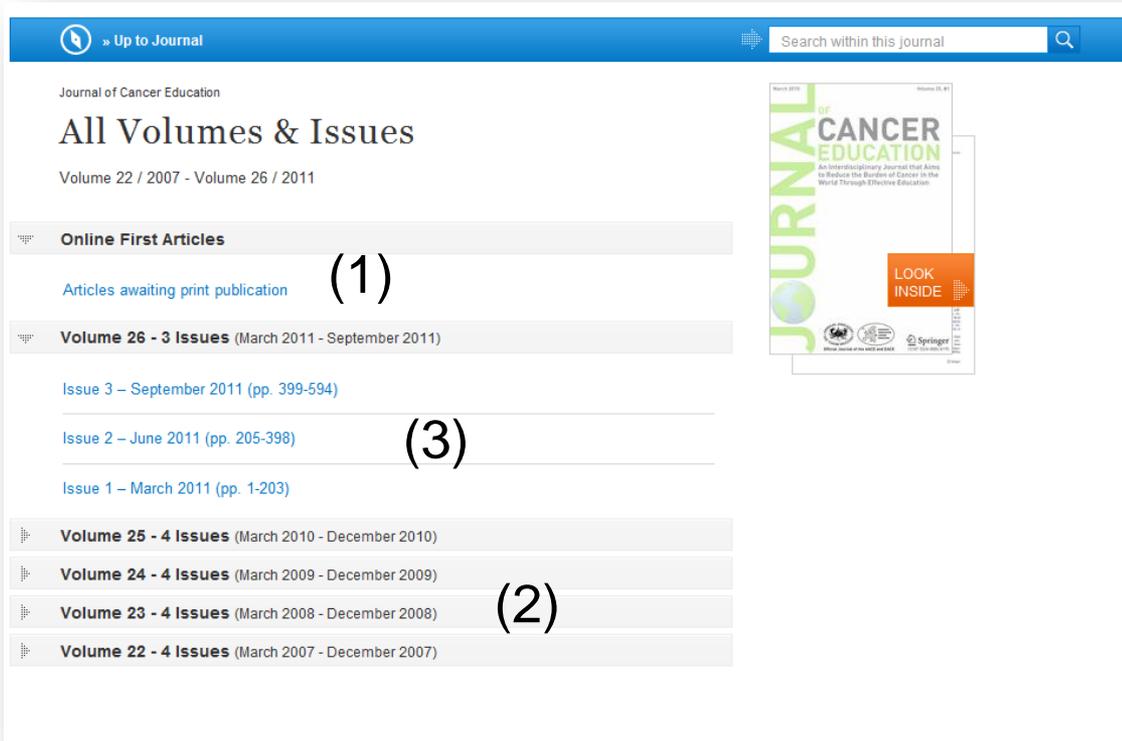
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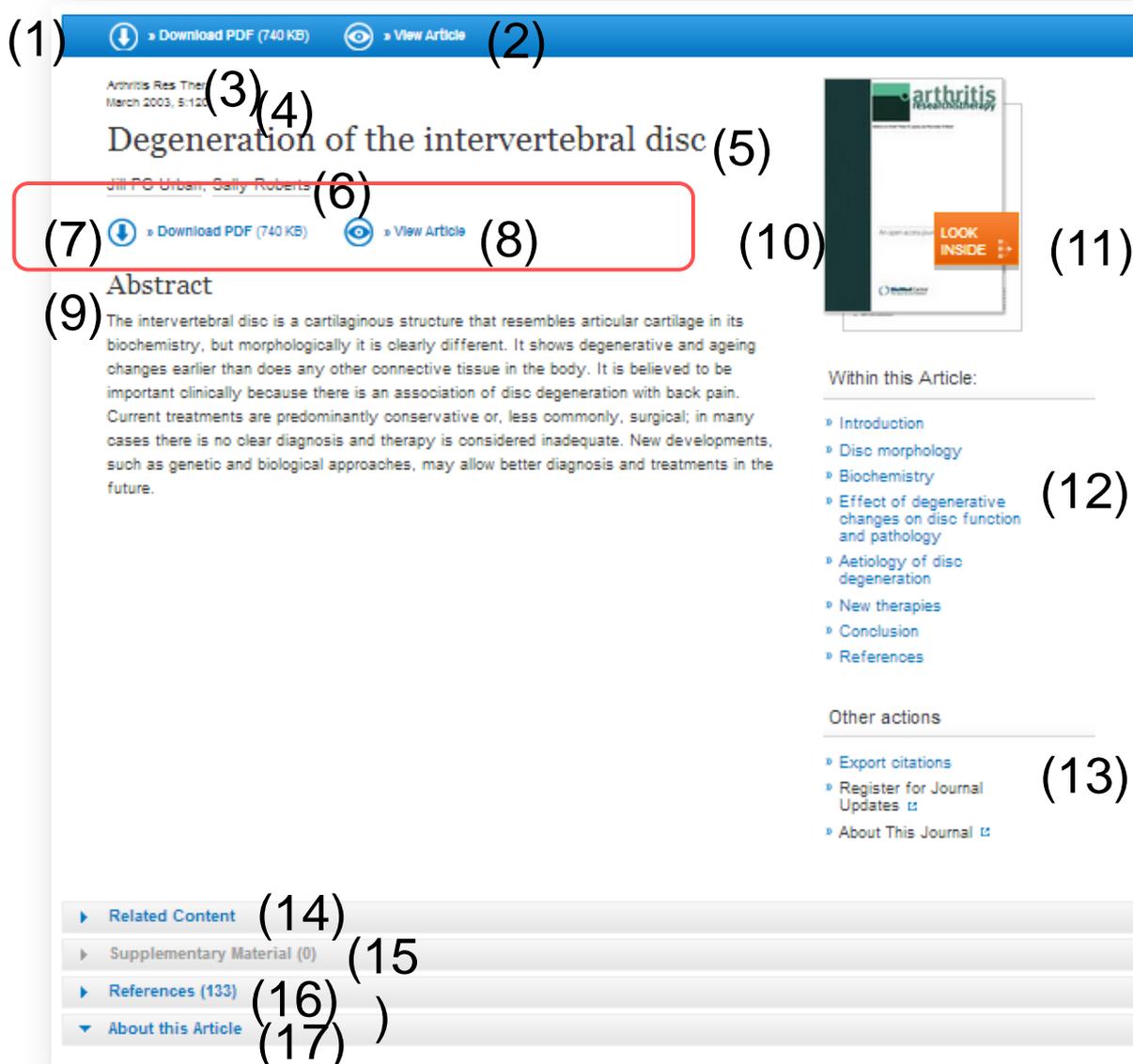
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The intervertebral disc is a cartilaginous structure that resembles articular cartilage in its biochemistry, but morphologically it is clearly different. It shows degenerative and ageing changes earlier than does any other connective tissue in the body. It is believed to be important clinically because there is an association of disc degeneration with back pain. Current treatments are predominantly conservative or, less commonly, surgical; in many cases there is no clear diagnosis and therapy is considered inadequate. New developments, such as genetic and biological approaches, may allow better diagnosis and treatments in the future.

(10) (11) LOOK INSIDE

Within this Article:

- Introduction
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## Mechanical properties a evolution in ultrafine-gr processed by severe plas

Jitka Vrátná<sup>1</sup>, Miloš Janeček<sup>1</sup> , Jakub Čížek<sup>2</sup>, Dong Jur

- (1) Department of Physics of Materials, Faculty of Mathema Czech Republic
- (2) Department of Low Temperature Physics, Faculty of Ma Prague, Czech Republic
- (3) Department of Materials Science and Engineering, POS

 **Miloš Janeček**  
Email: [janecek@met.mff.cuni.cz](mailto:janecek@met.mff.cuni.cz)

Received: 10 November 2012

Accepted: 9 January 2013

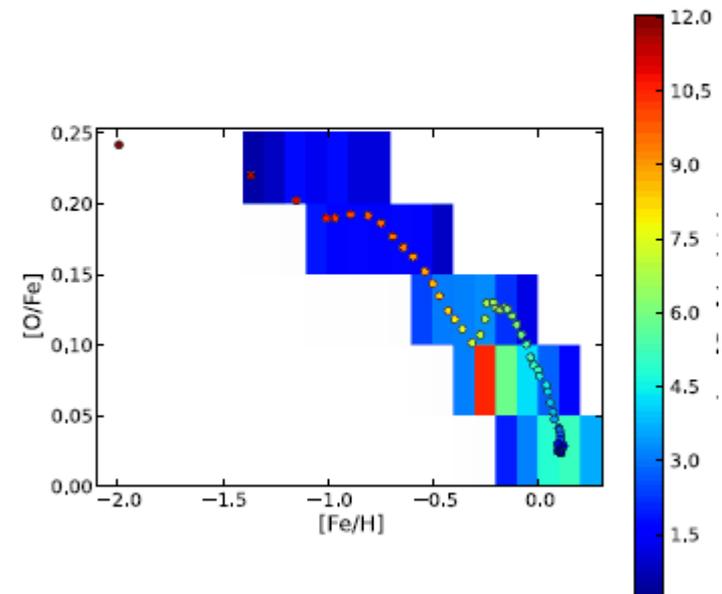
Published online: 24 January 2013

### Abstract

Commercial [MgAlZn alloy AZ31](#) was processed by two te extrusion followed by equal channel angular pressing (EX Processing by ECAP was conducted at elevated tempera HPT was applied at room temperature, and the specimen turns ( $N = \frac{1}{4} - 15$ ) were prepared. Mechanical properties and HPT were investigated by [Vickers](#) microhardness me

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Way-like galaxy from Stinson et al. (2013), where each par subsets in the simulations, sorted by their age: there is a cl 'young, thin, extended'



## References

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2. Capua I, Alexander DJ: **The challenge of avian influenza.**

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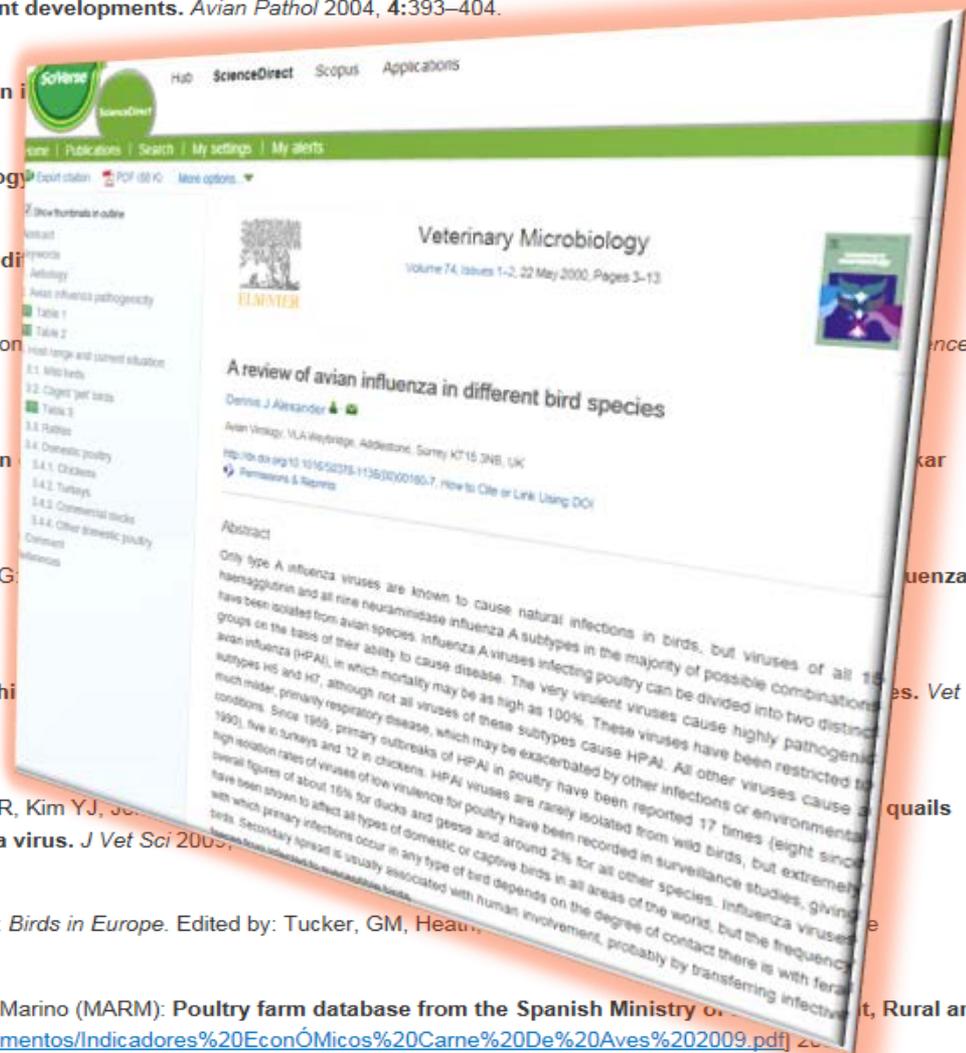
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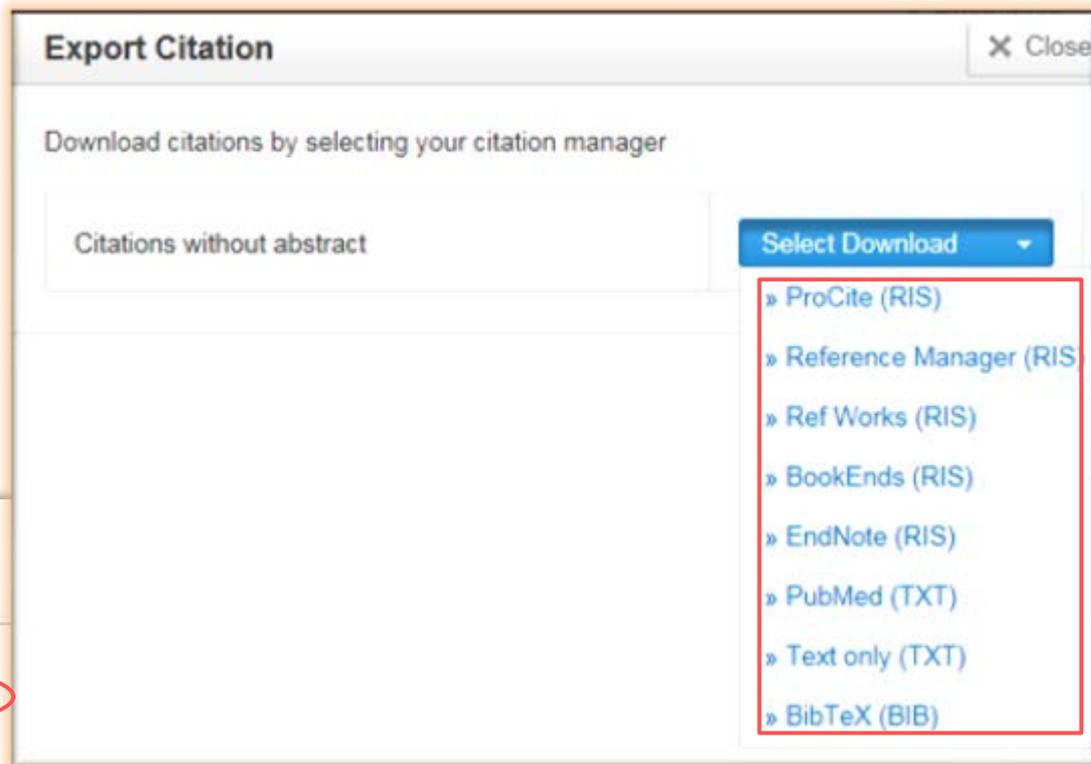
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[CrossRef](#)

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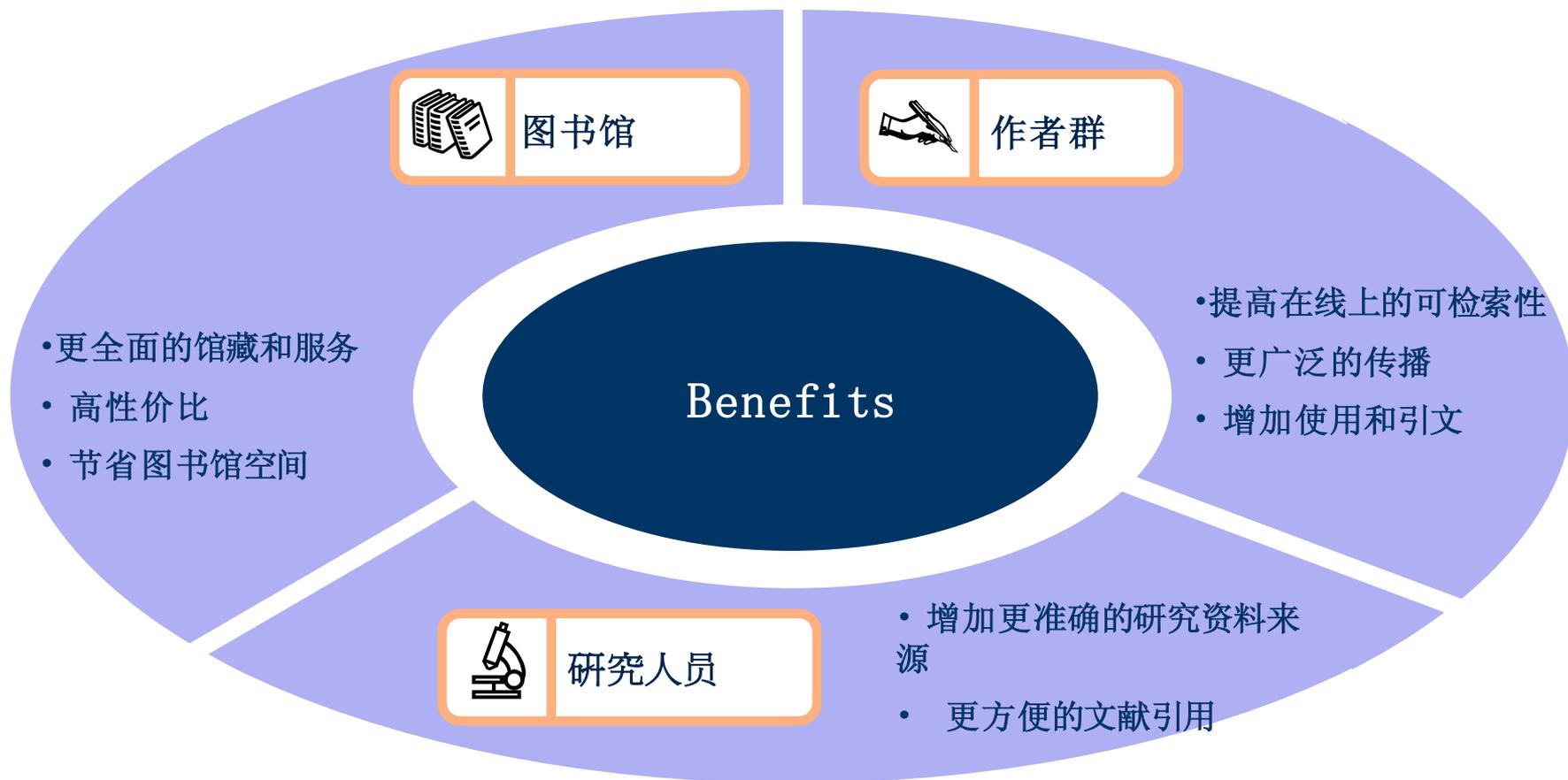
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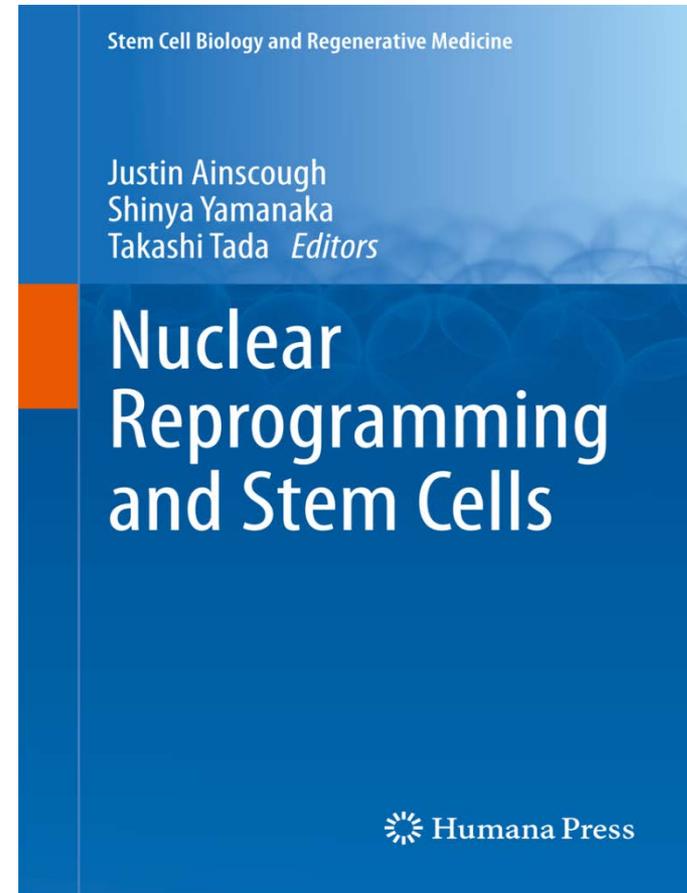
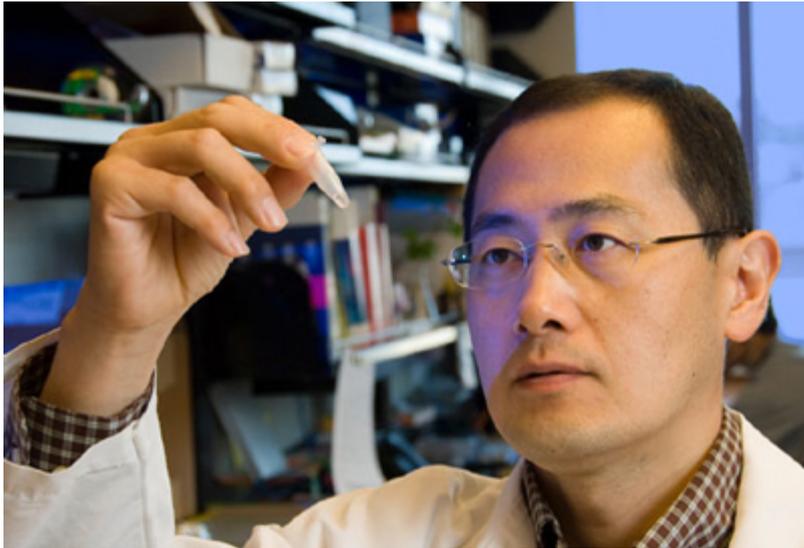
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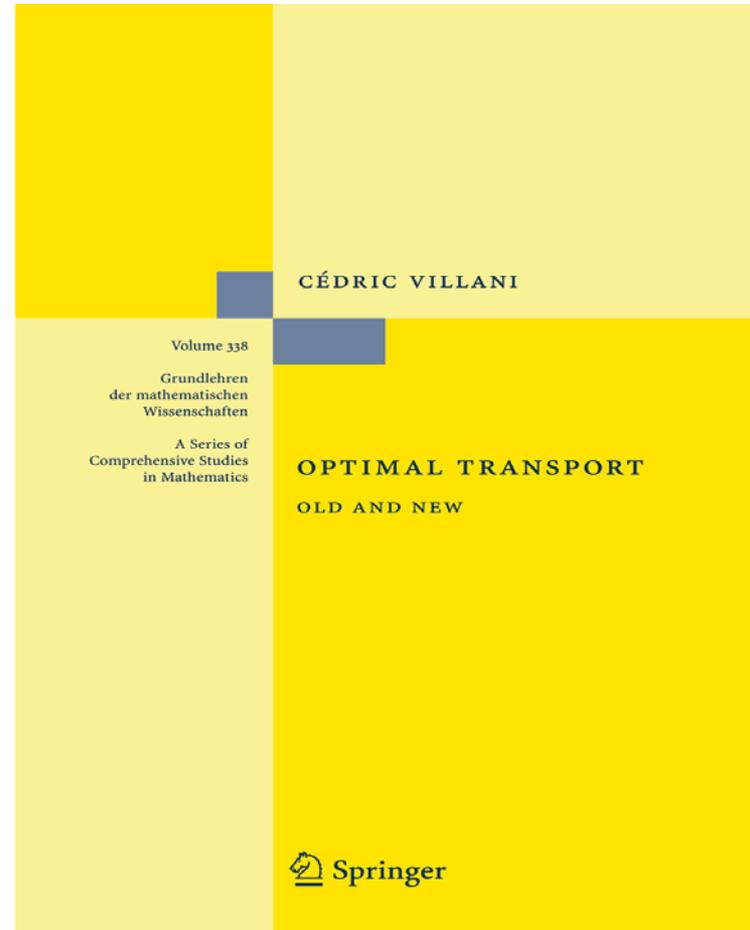
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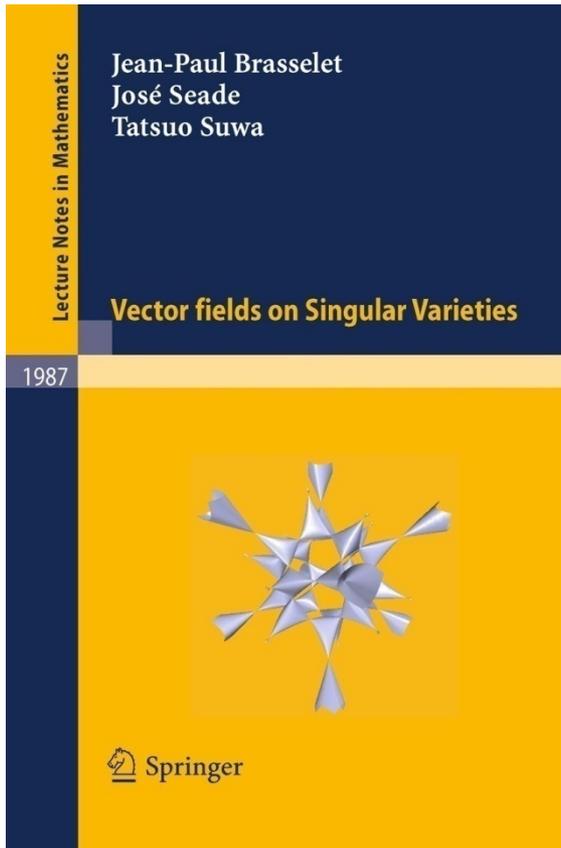


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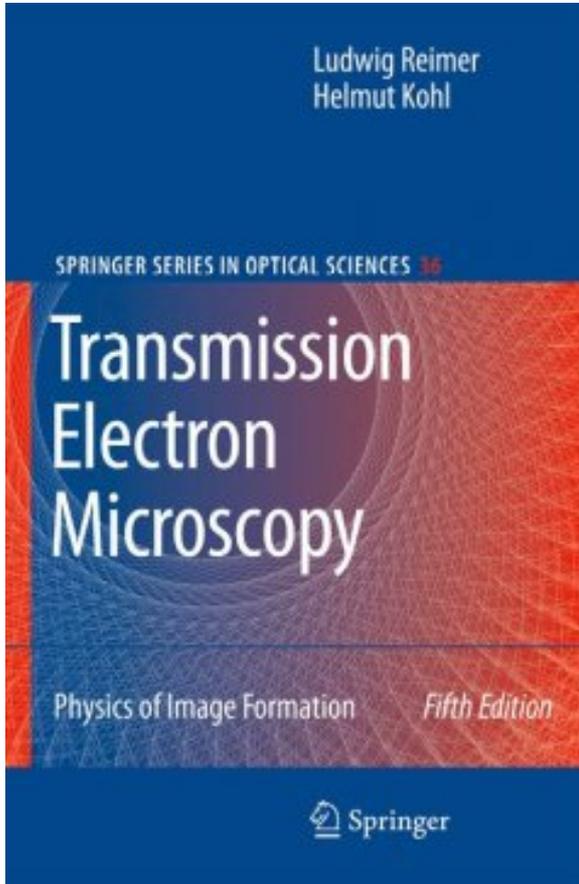


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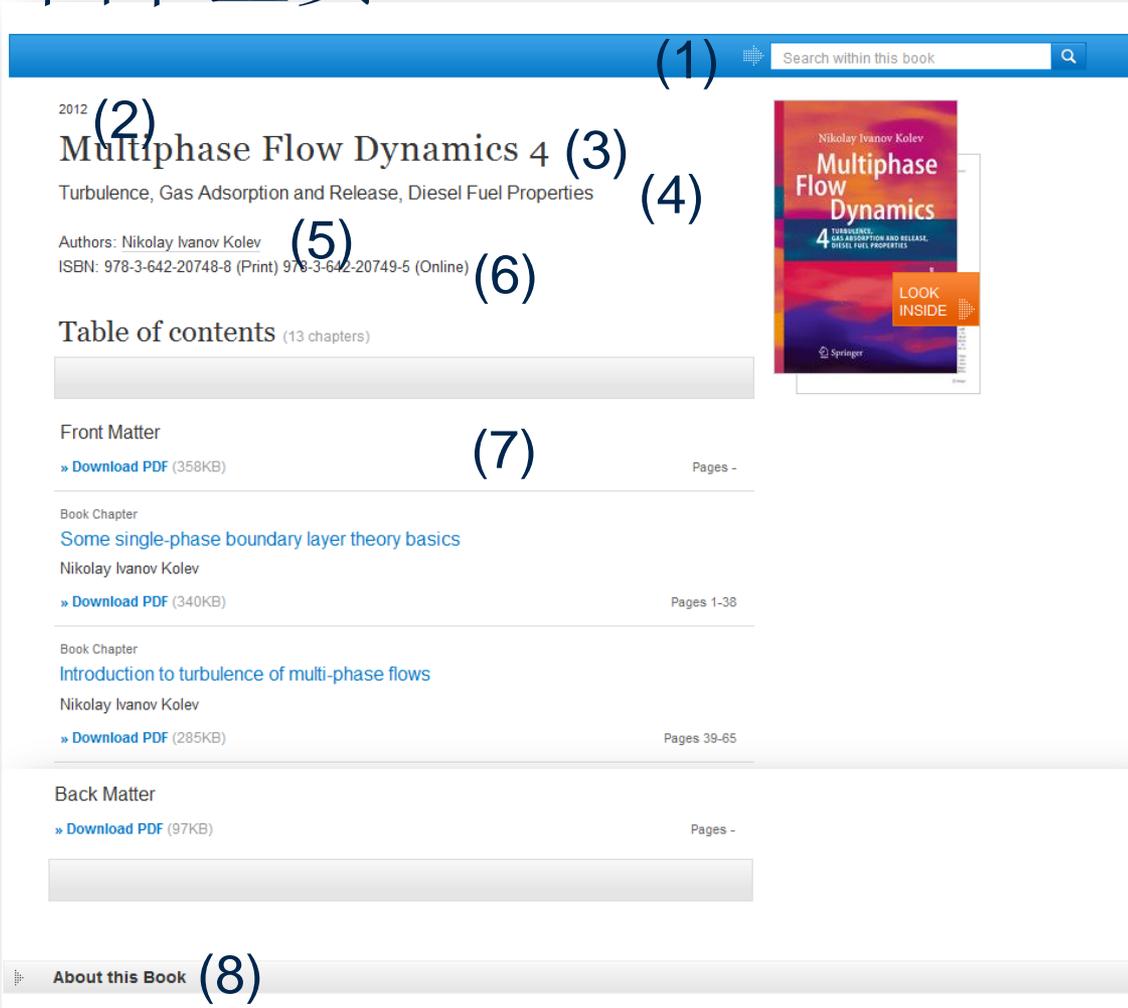
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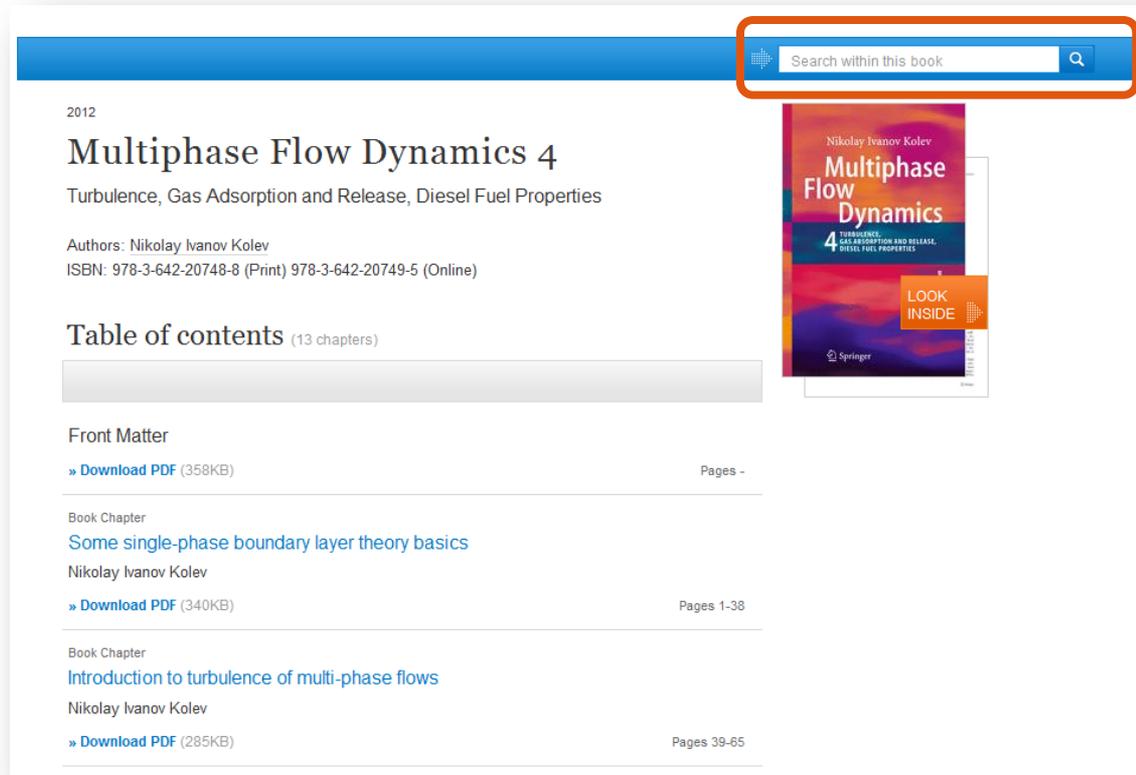
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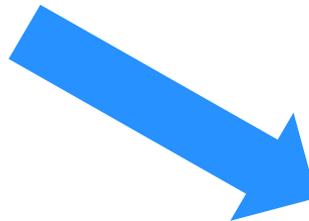
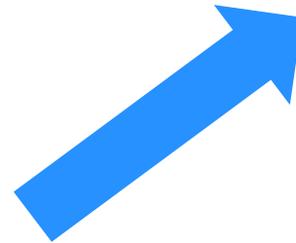
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salt, onions,  
parsley, chilly  
peppers, and the  
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Stir with a fork until well  
mixed.



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- 2.9 SigTerms

### 3 Methods

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- 3.2 miReduce
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- 3.11 Small RNA Workbench

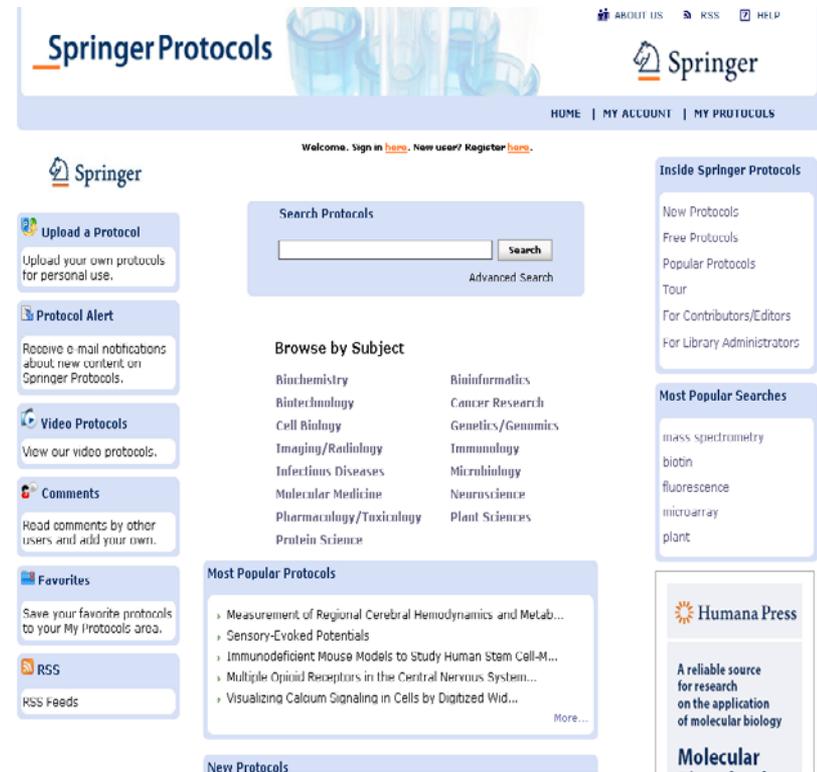
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- 4.1 How to Use SigTerms?
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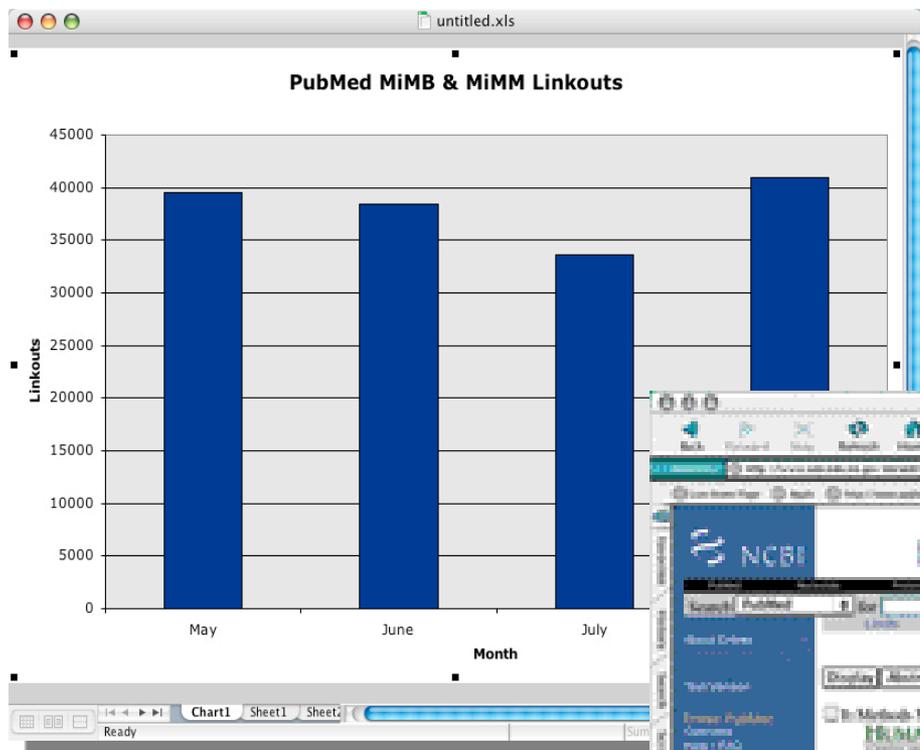
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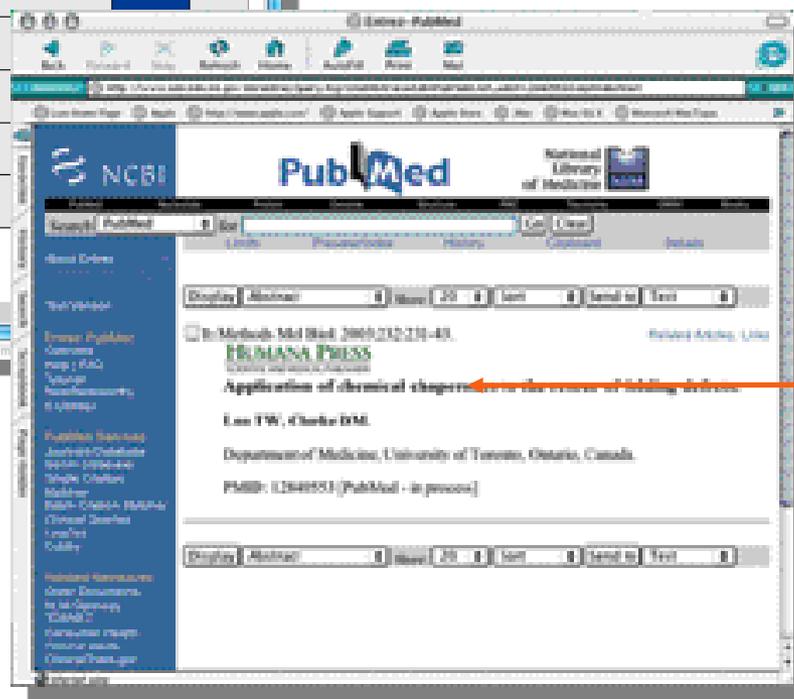


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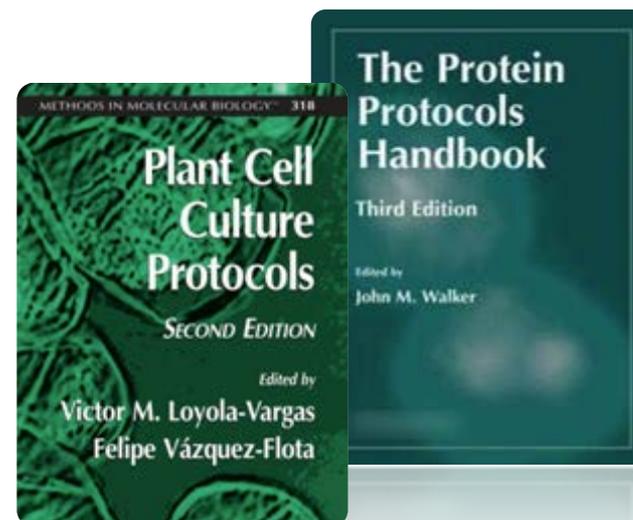
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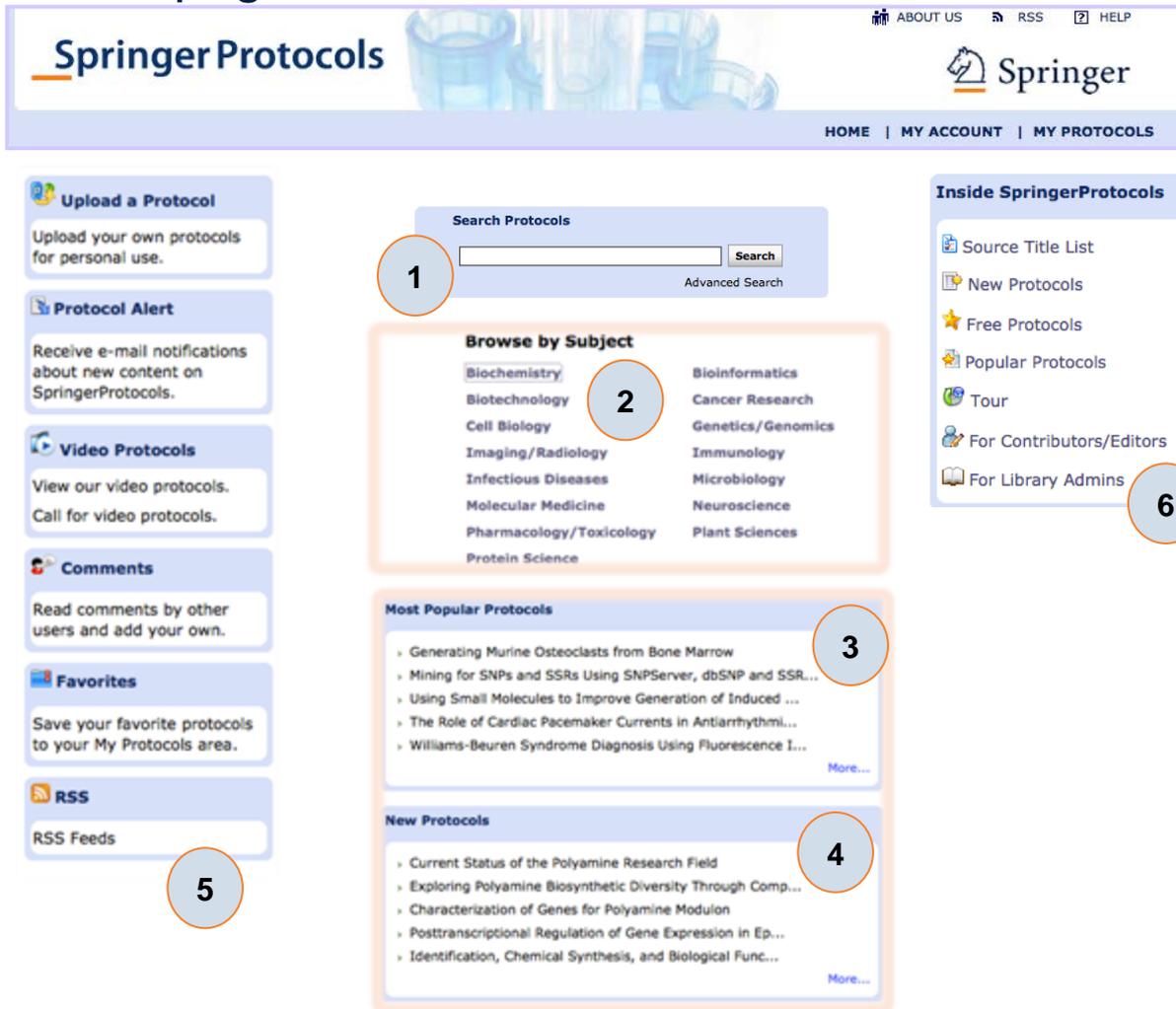
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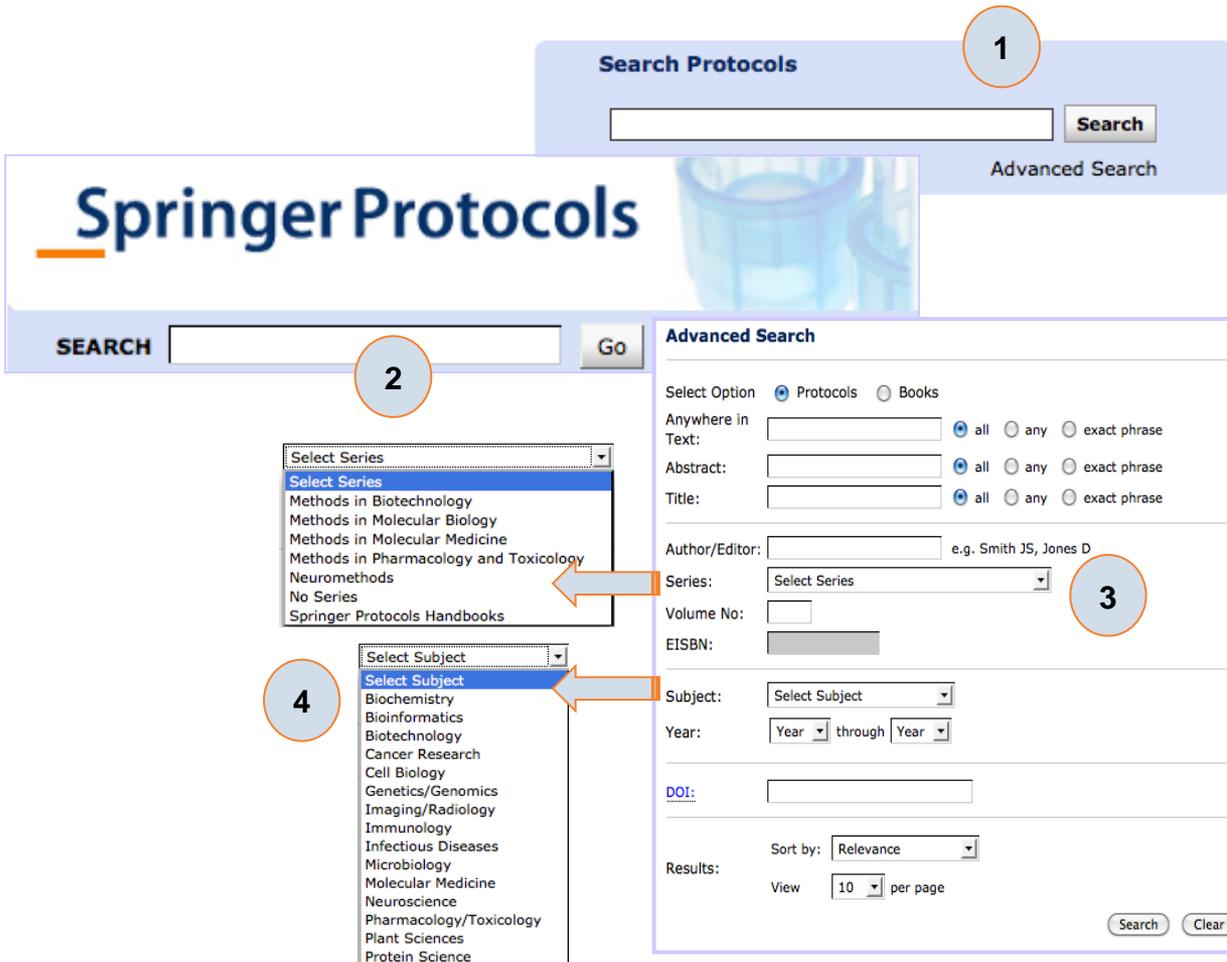
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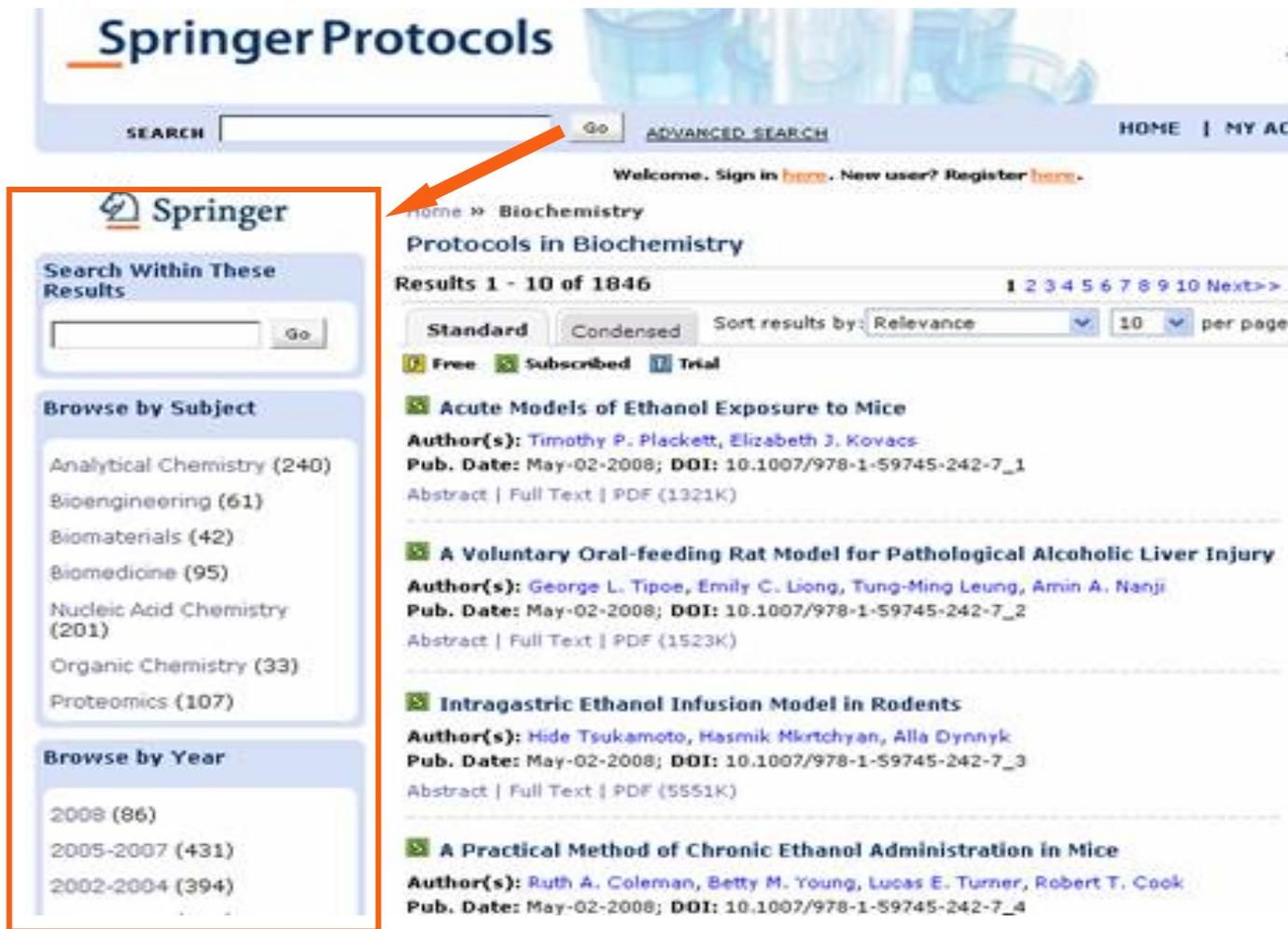


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Prion infectivity is often linked to presence of the protease-resistant isoform of prion protein (PrP), PrP<sup>res</sup>; therefore, it is of highest interest to have convenient methods for rapid detection of PrP<sup>res</sup> in the research laboratory. For detection of PrP<sup>res</sup> in model systems to confirm infectivity, there are several methods that can be applied. This chapter focuses on detection of PrP<sup>res</sup> by proteinase K digestion followed by Western blot, which is the only method that is both quantitative and qualitative. For large-scale screening of PrP<sup>res</sup> content in samples, the dot blot method offers a great advantage for detecting PrP<sup>res</sup>, and this method is also thoroughly described in this chapter.

**Affiliation(s):** (1) Department of Biochemistry and Biophysics, Stockholm University, Stockholm, Sweden

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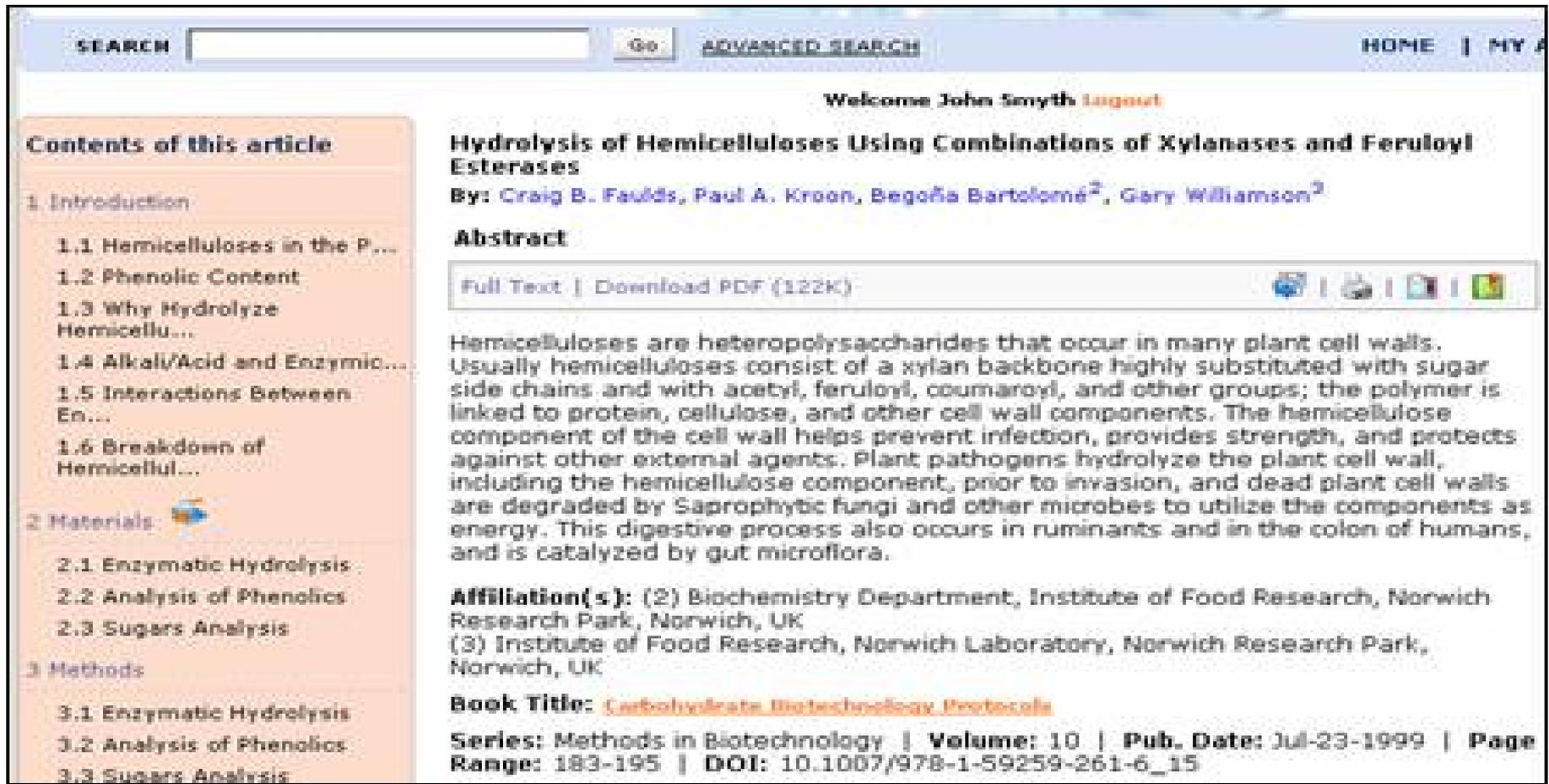
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### Hydrolysis of Hemicelluloses Using Combinations of Xylanases and Feruloyl Esterases

By: Craig B. Faulds, Paul A. Kroon, Begonia Bartolomé<sup>2</sup>, Gary Williamson<sup>2</sup>

#### Abstract

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Hemicelluloses are heteropolysaccharides that occur in many plant cell walls. Usually hemicelluloses consist of a xylan backbone highly substituted with sugar side chains and with acetyl, feruloyl, coumaroyl, and other groups; the polymer is linked to protein, cellulose, and other cell wall components. The hemicellulose component of the cell wall helps prevent infection, provides strength, and protects against other external agents. Plant pathogens hydrolyze the plant cell wall, including the hemicellulose component, prior to invasion, and dead plant cell walls are degraded by Saprophytic fungi and other microbes to utilize the components as energy. This digestive process also occurs in ruminants and in the colon of humans, and is catalyzed by gut microflora.

**Affiliation(s):** (2) Biochemistry Department, Institute of Food Research, Norwich Research Park, Norwich, UK  
(3) Institute of Food Research, Norwich Laboratory, Norwich Research Park, Norwich, UK

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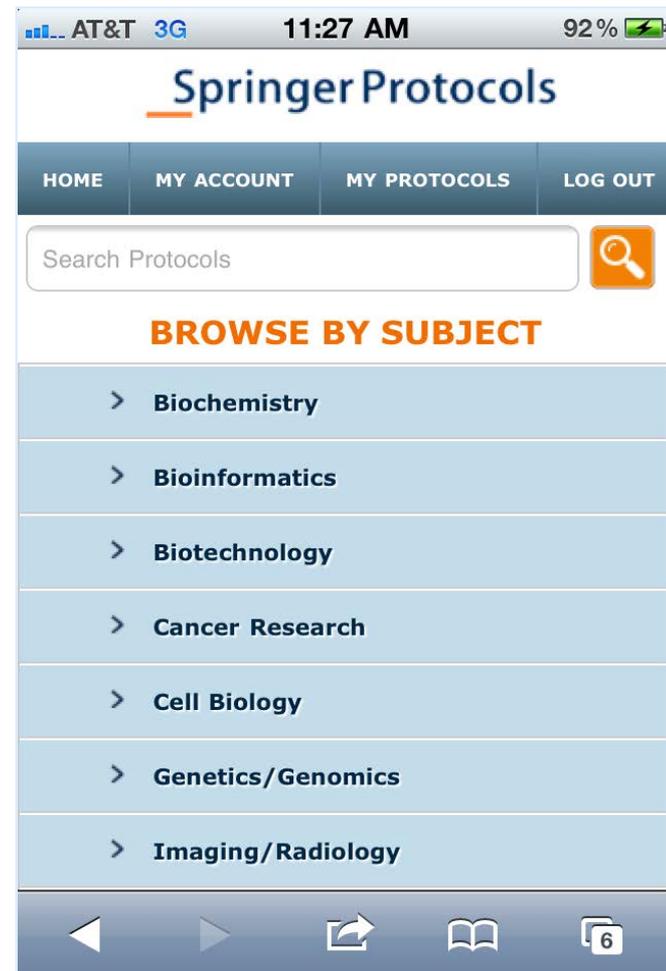
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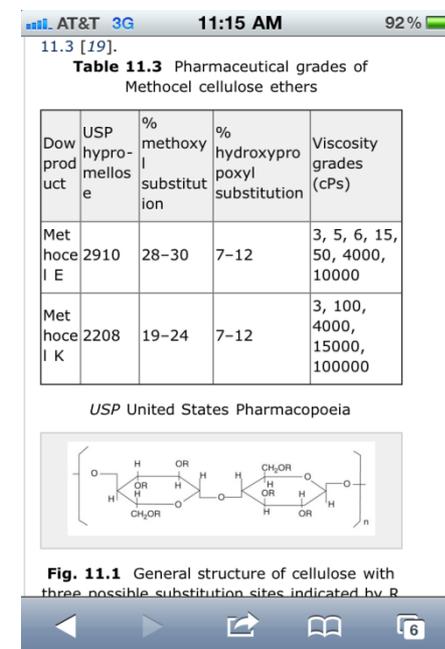
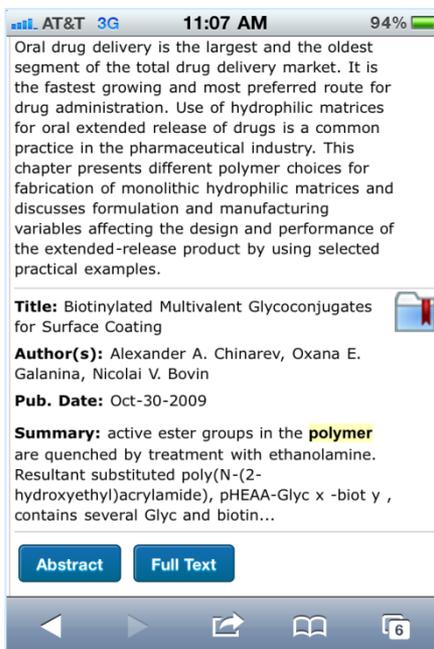
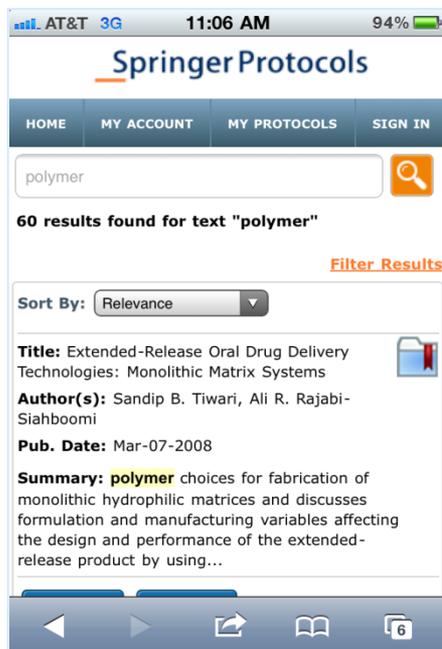


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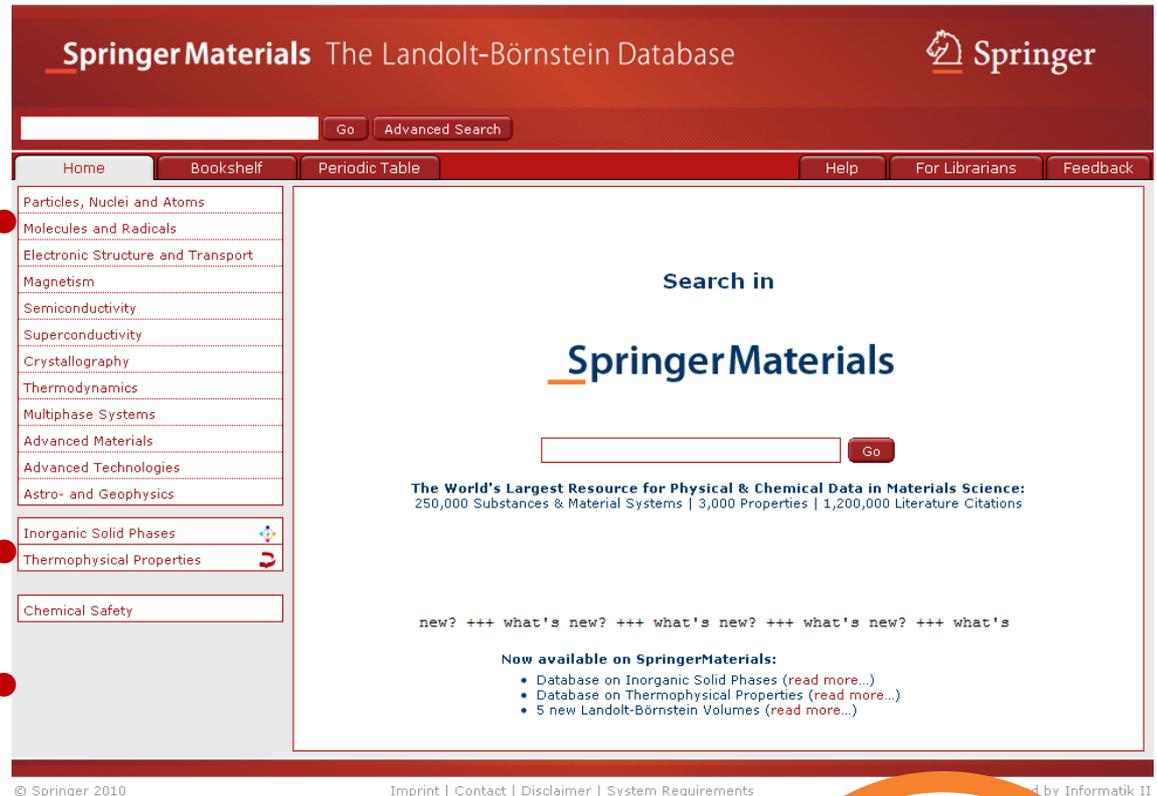
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Registry Number: 25617-97-4 ... Metadata - Molecular  
length:  $\lambda$  [ $\mu\text{m}$ ] 1.80 1.90 2.0 ... and doping) [76Ka2]: Change in

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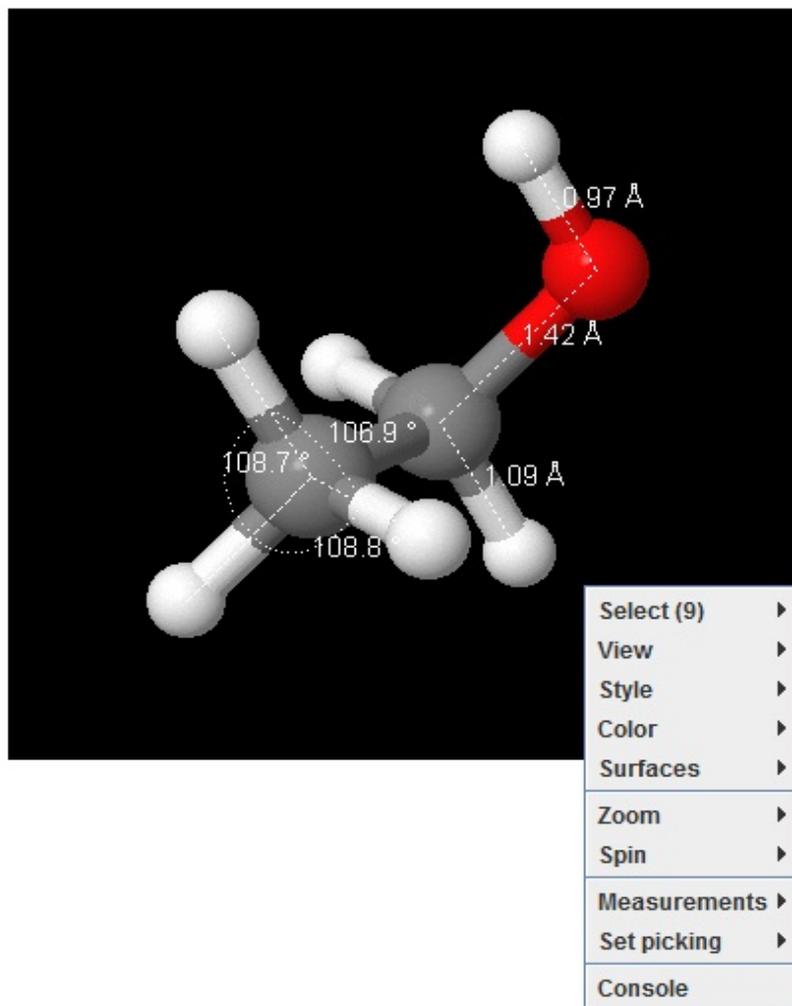
refractive index ... Metadata - CAS Registry Number:  
GaN) property: optical properties, ... of the absorption

Molecular Formula: GaN ... Fulltext: GaN, physical properties  
State Commun. (1992) 81, 23-26. ... localization of as-grown

Compounds > Lattice Properties > Gallium nitride

Registry Number: 25617-97-4 ... Metadata - Molecular  
... 70M  $\epsilon$ [( $\infty$ )] 5.24(23) extrapolation of refractive index 71E

## Ethanol



<b>Name</b>	Ethanol
<b>Molecular Formula</b>	$C_2H_6O$
<b>Element system</b>	C-H-O
<b>CAS-RN</b>	64-17-5, 8000-16-6, 8024-45-1, 121182-78-3

### Search for Ethanol

### Synonyms

ethyl alcohol; Ethylalkohol; Alkohol; absoluter Alkohol; Weingeist; Brennsprit; Äthanol; 100C.NPA; Alcare Hand Degermer; Alcohol; Alcohol anhydrous; Algrain; Anhydrol; Anhydrol PM 4085; Desinfektol EL; Duplicating Fluid 100C.NPA; Esumiru WK 88; Ethicap; Ethyl hydrate; Ethyl hydroxide; Hinetoless; IMS 99; Jaysol; Jaysol S; Methylcarbinol; Molasses alcohol; Potato alcohol; SDA 3A; SDA 40-2; SY Fresh M; Synasol; Tecsol; Tecsol C; Alcohol, Ethyl; Absolute ethanol; Aethanol; Aethylalkohol; Alcohol, anhydrous; Alcohol, dehydrated; Alcohol, diluted; Alcohols; Alkohol; Cologne spirit; Ethanol 200 proof; Ethyl alc; Ethyl alcohol, anhydrous; EtOH; Fermentation alcohol; Grain alcohol; NCI-C03134; Spirits of wine; Spirt; SD Alchol 23-hydrogen; Thanol; Ethanol, wasserfrei; Ethanol vergällt; Methylcabinol; Spiritus; Ethyl alcohol, denatured; Alcohol Absolute; Ethanol absolut; Ethanol wasserfrei; absoluter Alkohol; Äthanol;  $C_2H_6O$  (ethanol);  $C_2H_5OH$ ;  $C_2H_5(OH)$ ; Ethylhydroxid

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**Property Type EVLM1131**  

### Chemical Safety:

**European regulations regarding Ethanol (C2H6O)**



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refractive index ... Metadata - CAS Registry Number:  
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Molecular Formula: GaN ... Fulltext: GaN, physical properties  
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... 70M  $\epsilon_{||}(\infty)$  5.24(23) extrapolation of refractive index 71E

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ethanol

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Organic semiconductors

nschweig: Vieweg, 1981. 81K Kao, K. C., Hwang,

## 内容:

- 来源: 经同行评审的期刊的数据与信息
- 数字和图表是最准确及备受材料工业肯定
- 内容定期更新, 以跟上科学与技术发展的进度
- 互动式3D分子结构库提供直接可视化和测量
- 集成引文工具方便导出PDF, CSV和RIS文件

substance: boron nitride (BN)  
property: properties of wurtzite-type

For crystal structure see Fig. 1.

w-BN is generally produced in very small quantities. Thus, the measurement of its properties is difficult.

Electronic properties

band structure: Fig. 2

All recent calculations yield indirect band structure.

energy gap

$E_{g,ind}(\Gamma-K)$	5.81 eV
$E_{g,dir}(\Gamma)$	8.0 eV
$E_{g,dir}(M)$	9.3 eV
$E_{g,dir}(L)$	10.7 eV
$E_{g,dir}(A)$	10.6 eV
$E_{g,dir}(H)$	12.8 eV
$E_{g,dir}(K)$	11.7 eV

structure of valence band

$E_{v,max} - E_{v,min}$	21.0 eV
$E_{\pi}$	11.76 eV
$E_{\sigma}$	6.28 eV
$E_{g,\sigma\pi}$	2.93 eV

Fig. 1. Crystal structures of four modifications of boron nitride.

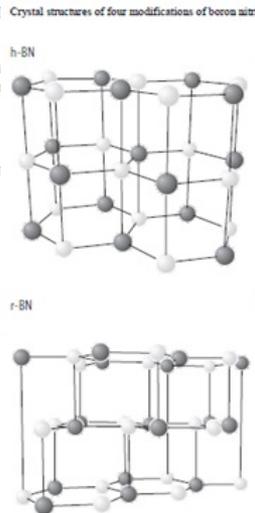
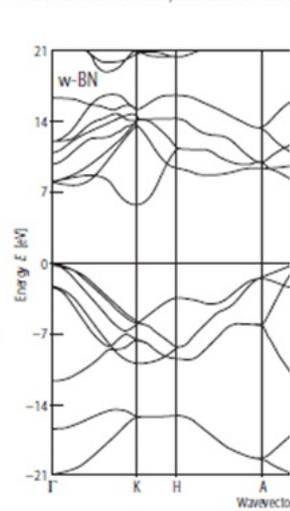
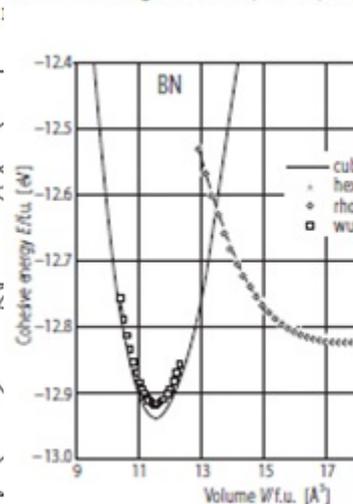


Fig. 2. w-BN. Band structure, calculated with the pseudopotential method.



Cohesive energies of c-BN, w-BN, h-BN



Further properties

cohesive energy

see Fig. 9

$\Delta E_0$  0.011 eV/atom difference to  $E_0$  of c-BN

density

$d$	3.473 g cm <sup>-3</sup>	standard conditions	X-ray diffraction
	3.49 g cm <sup>-3</sup>	at 25 °C	
	3.470 g cm <sup>-3</sup>	at 25 °C	

Debye temperature

$\Theta_D$	1594(2) K	$T = 300$ K	calorimetry
	(1760 ± 60) K	$T = 50$ K	
	(1460 ± 70) K		

Temperature dependence of Debye temperature: see Fig. 10.

entropy, enthalpy, heat capacity

$S_{298.15}^0$	(7.239 ± 0.017) J mol <sup>-1</sup> K <sup>-1</sup>	
$H_{298.15}^0 - H_0^0$	(1541 ± 3) J mol <sup>-1</sup>	
$C_p(298.15)$	(16.45 ± 0.02) J mol <sup>-1</sup> K <sup>-1</sup>	
$C_p^0(T)$	$48.351(T^2/(T^2 - 8.369T + 68306.334))^2$ J mol <sup>-1</sup> K <sup>-1</sup>	
	$T = 420...980$ K	calorimetry

For low temperature values of  $C_p$  see Fig. 11.

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1 H	2 D	3 T										5 B	6 C	7 N	8 O	9 F	10 He
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5 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6 Cs	56 Ba	**	58 Hf	59 Ta	60 W	61 Re	62 Os	63 Ir	64 Pt	65 Au	66 Hg	67 Tl	68 Pb	69 Bi	70 Po	71 At	72 Rn
7 Fr	88 Ra	**	90 Rf	91 Db	92 Sg	93 Bh	94 Hs	95 Mt	96 Ds	97 Rg	98 Cn	99 Nh	100 Fl	101 Lv	102 Ts	103 Og	
	57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu		
	**	99 Ac	100 Th	101 Pa	102 U	103 Np	104 Pu	105 Am	106 Cm	107 Bk	108 Cf	109 Es	110 Fm	111 Md	112 No	113 Lr	

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Al-Fe-Ni-Ti

Al-Fe-O-Ti

Al-Fe-Ti-V

Al-B-Fe-Ni-Ti

Al-Cr-Fe-O-Ti

Al-Fe-Mg-O-Ti

Al-Fe-Na-O-Ti

Al-Fe-O-Si-Ti

Al-B-Fe-Mg-O-Ti

Al-Ca-Fe-Mg-Mn-Ti

Al-Ca-Fe-O-Si-Ti

Al-Ca-Fe-O-Ti-Zr

Al-Ce-Fe-O-Si-Ti

Al-Co-Cu-Fe-Ni-Ti

Al-Cr-Fe-Mg-O-Ti

Al-Cr-Fe-Nb-Ni-Ti

Al-Fe-H-O-Si-Ti

Al-Fe-Mg-O-Si-Ti

Al-Fe-Mn-O-Pb-Ti

Al-Fe-Mo-O-Sr-Ti

Al-Fe-Nd-O-Si-Ti

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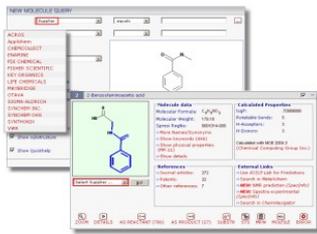


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**New: Database Refresh**

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