

A close-up, black and white photograph of a scientist in a white lab coat looking through a microscope. The scientist's face is partially visible, with their eyes focused on the eyepieces. The background is blurred, emphasizing the scientist and the microscope. A blue triangular graphic element is positioned on the right side of the image, partially overlapping the text.

SpringerMaterials 如何  
帮助您进行材料科学与工程  
的研究和数据检索

**SPRINGER NATURE**

# SpringerMaterials是什么？

SpringerMaterials: 经筛选整理的材料性质数据库

主要材料类型与性质分类包括

金属  
与合金

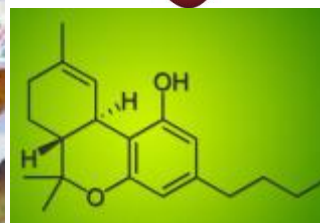
陶瓷  
与玻璃

高分子聚  
合物

有机物

复合材料

原子  
与原子核



- SpringerMaterials大大降低询查和核对资料与数据的时间!!!

# 关键材料科学主题涵盖



7个数据库, 530,000+ 文档, 290,000+ 材料, 32,000 物性档 以及更多正在更新的内容

**LANDOLT-  
BÖRNSTEIN**

专家撰写综述及  
众多物性档案

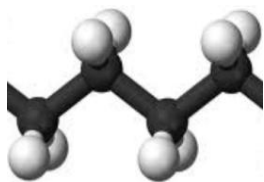
**MSI** |   
Science Simplified

专家撰写的报告  
以及互动相图

*Linus Pauling*

**Inorganic Solid Phases**

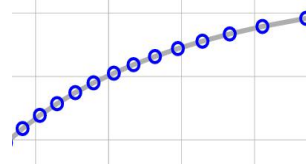
1. 相图
2. 化学及物理物性
3. 晶体结构及数据



**Advanced Thermal  
Analysis System  
(ATHAS) –  
高分子的热物性数据**

  
**DDBST**

**Dortmund Data Bank  
Software & Separation  
Technology –  
有机物质的热物性数据**



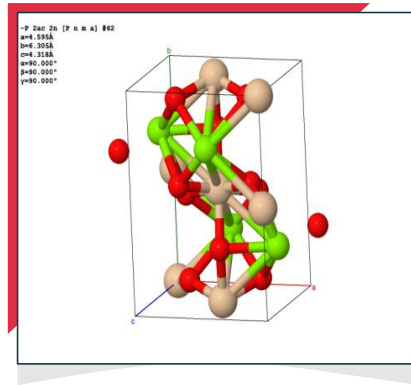
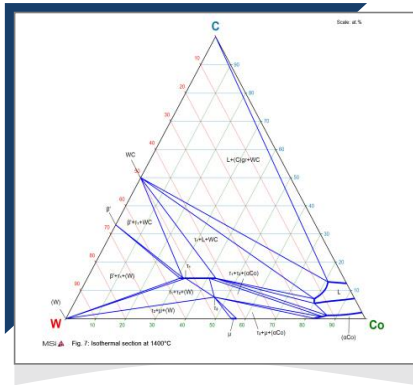
**等温吸附曲线数据库**



**腐蚀数据库**

# SpringerMaterials 内容概览

数据类型：相图、晶体结构、数据表格、材料性质档案、曲线图等等。



### Calculated and Experimental data

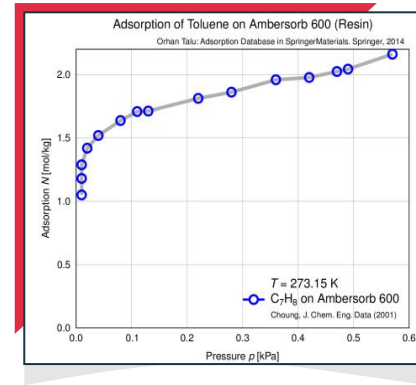
Amorphous + Crystalline

Filter data by:  
Temperature [K]

0.1 — 600

Hide Filter Tools

Temperature T [K]	Amorphous State			Crystalline State				
	Heat Capacity C <sub>p</sub> [J/K mol]	Enthalpy H-H <sub>0</sub> [J] [J/mol]	Entropy S [J/K mol]	Gibbs Energy G-H <sub>0</sub> [J] [J/mol]	Note	Heat Capacity C <sub>p</sub> [J/K mol]	Enthalpy H-H <sub>0</sub> [J] [J/mol]	Entropy S [J/K mol]
0.100	0.0000	69321.6400	123.7300	49369.2700	?	0.0000	0.0000	0.0000
0.200	0.0000	69321.6400	123.7300	49296.8900	?	0.0000	0.0000	0.0000
0.300	0.0000	69321.6400	123.7300	49284.5200	?	0.0000	0.0000	0.0000
0.400	0.0000	69321.6400	123.7300	49272.1500	?	0.0000	0.0000	0.0000



### Corrosion Search

Find out a corrosion rate and its relevant details by entering a material and/or environment into the search box below.

material: Nickel alloy 200 x assessment: Sodium Hydroxide

material: Nickel alloy G x

Enter material and/or environment

65 results

Material	Environment	Rating	Show all details
Nickel alloy 200	Sodium Hydroxide	A (Resistant) 0.0-0.001 mpy/yr	

Conditions: Ion concentration unknown Temperature: 121.0 °C Duration: 20 d Localized attack:

UNS No: N02200 Reference: Corrosion Resistance of Nickel and Nickel-Containing Alloys in Caustic, Soda and Other Alkalies, Corrosion Engineering Bulletin CEB-2, The International Nickel Company, Inc., 1973

Nickel alloy 200 Sodium Hydroxide A (Resistant) 0.0-0.001 mpy/yr

Nickel alloy 200 Sodium Hydroxide A (Resistant) 0.01 mpy/yr

### 1-Methyl-Pyrrolidine-2-One

Molecular Formula: C<sub>5</sub>H<sub>9</sub>NO  
Element System: C-H-N-O  
CASRN: 20134-85-8; 5774-35-4; 5782-48-4; 87269-4  
MOL: NCC1=CCCC1=O; N1CCCC1=O  
InChIKey: SC2030G0N80A; UNF1902Y3A

Explore this substance  
View all 368 documents

Properties frequently appearing with 1-methyl-pyrrolidine-2-one

- Density (26)
- Heat Of Sublimation (2)
- Vapor-Liquid Equilibrium (77)
- Heat Of Fusion (2)
- Solid-Liquid Equilibrium (38)
- Heat Of Solution (4)
- Anomaly (2)
- Excess Volume (26)
- Mixing Enthalpy (26)
- Viscosity (25)
- Solid-Liquid Phase Equilibrium (22)
- Density (26)
- Heat Of Sublimation (2)
- High-Pressure Fluid Phase Equilibrium (1)
- Landscape (1)
- Molar Mass (1)
- Heat Conductivity (3)
- Molar Heat Capacity (1)
- Latent Heat (1)
- Heat Capacity (2)
- Heat Of Fusion (2)
- Heat Of Solution (4)
- Chemical Shift (8)
- Vapor Pressure (2)
- Clustering Coefficient (2)
- Boiling Point (2)
- Liquid-Liquid Equilibrium (2)
- Chemical Composition (1)

### Eu<sub>4</sub>Ga<sub>8</sub>Ge<sub>15</sub> ht charge carrier mobility

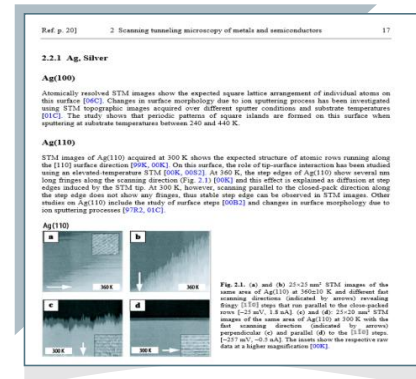
General Information

Hermann Mangan Symbol(s): Pr-3  
Phase Label(s): C<sub>2</sub>(Cu)<sub>2</sub>(Ge)<sub>2</sub>H  
Structure Class(es):

Property Class(es): Inhomogent FM, metal, semiconductor  
Mineral Name(s):

Phason Symbol: 012  
Space Group: 231  
Phase Prototype: C<sub>2</sub>(Cu)<sub>2</sub>(Ge)<sub>2</sub>(a,b)R  
Compound Class(es): Intermetallic

Property	Temperature	Remark	ISF ID	Reference	Crystallographic Database
$\mu_n = 1.7 \cdot 10^4 \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$	T = 2 K	Van Hall mobility measurements	P198692	35377; Paschen (2001)	SC102999
$\mu_n = 7 \cdot 10^4 \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$	T = 300 K	Van Hall mobility measurements	P198692	35377; Paschen (2001)	SC102999



数据库内容按季度更新

# SpringerMaterials: 打造现代数据库



**多种来源科学内容筛选整理**

**数据数字化、充实并整合**

**材料科学独特功能**

**数据来源:** 经典 Landolt-Börnstein 系列、MSI Eureka、Linus Pauling 文档-无机固相、聚合物热力学数据库 (ATHAS)、Dortmund 分离技术数据库、施普林格系列手册 (例如, VDI Heat Atlas)、吸附数据库、NIST 腐蚀数据库、SpringerMaterials 基础知识手册



# 关于SpringerMaterials的问题？



访问数据库：

[materials.springer.com](https://materials.springer.com)



基本信息：

[springer.com/springermaterials](https://springer.com/springermaterials)



Linkedin：

[SpringerMaterials on LinkedIn](#)

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(海德堡)

**Jessie Xiao 博士：**

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(北京)

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(东京)

**Robin Padilla 博士：**

[robin.padilla@springernature.com](mailto:robin.padilla@springernature.com)

(纽约)





[H Search by Elements](#) [🏠 Search by Structure](#) [📄 Corrosion Search](#) [✉ Contact us](#)

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## The research solution for identifying material properties

Fast and reliable insights accelerating materials science research

SpringerMaterials provides curated data and advanced functionalities to support research in materials science, physics, chemistry, engineering, and other related fields.

- **A comprehensive database** covering multiple material classes, property types, and applications
- **Enhanced data visualization** features display interactive crystal structures, data tables, and phase diagrams with export options for further analysis
- **Search functions optimized for materials science** like elemental composition or chemical structure searching to quickly find material property data
- **Trusted and curated resource** with thousands of materials science experts ensuring high data quality

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[Search by Structure](#)

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## Search by Elements

Select the component elements in the periodic table below, then choose the desired system from the panel on the right.

<sup>1</sup> H	<sup>1</sup> D	<sup>1</sup> T																	<sup>2</sup> He
<sup>3</sup> Li	<sup>4</sup> Be											<sup>5</sup> B	<sup>6</sup> C	<sup>7</sup> N	<sup>8</sup> O	<sup>9</sup> F	<sup>10</sup> Ne		
<sup>11</sup> Na	<sup>12</sup> Mg											<sup>13</sup> Al	<sup>14</sup> Si	<sup>15</sup> P	<sup>16</sup> S	<sup>17</sup> Cl	<sup>18</sup> Ar		
<sup>19</sup> K	<sup>20</sup> Ca	<sup>21</sup> Sc	<sup>22</sup> Ti	<sup>23</sup> V	<sup>24</sup> Cr	<sup>25</sup> Mn	<sup>26</sup> Fe	<sup>27</sup> Co	<sup>28</sup> Ni	<sup>29</sup> Cu	<sup>30</sup> Zn	<sup>31</sup> Ga	<sup>32</sup> Ge	<sup>33</sup> As	<sup>34</sup> Se	<sup>35</sup> Br	<sup>36</sup> Kr		
<sup>37</sup> Rb	<sup>38</sup> Sr	<sup>39</sup> Y	<sup>40</sup> Zr	<sup>41</sup> Nb	<sup>42</sup> Mo	<sup>43</sup> Tc	<sup>44</sup> Ru	<sup>45</sup> Rh	<sup>46</sup> Pd	<sup>47</sup> Ag	<sup>48</sup> Cd	<sup>49</sup> In	<sup>50</sup> Sn	<sup>51</sup> Sb	<sup>52</sup> Te	<sup>53</sup> I	<sup>54</sup> Xe		
<sup>55</sup> Cs	<sup>56</sup> Ba	*	<sup>72</sup> Hf	<sup>73</sup> Ta	<sup>74</sup> W	<sup>75</sup> Re	<sup>76</sup> Os	<sup>77</sup> Ir	<sup>78</sup> Pt	<sup>79</sup> Au	<sup>80</sup> Hg	<sup>81</sup> Tl	<sup>82</sup> Pb	<sup>83</sup> Bi	<sup>84</sup> Po	<sup>85</sup> At	<sup>86</sup> Rn		

[Home](#) [Search by Elements](#) [Search by Structure](#) [Corrosion Search](#) [Contact us](#)

## Search by Structure

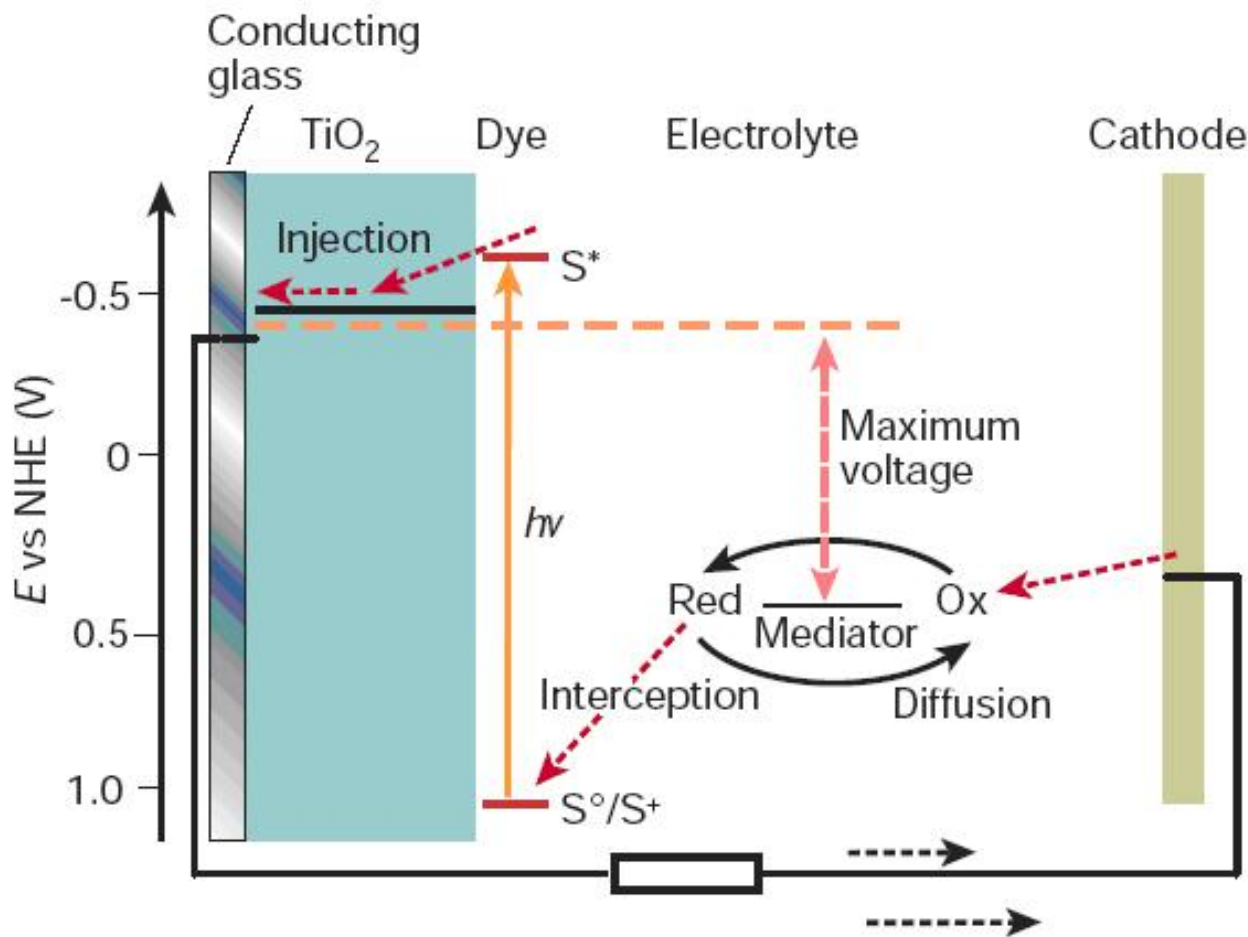
Search for an organic substance by drawing the molecule in the box below,  
then click on the 'Search' button.

Reset

[Search](#)

# 快速检索 (TiO<sub>2</sub>)

## ◆染料敏化太阳能电池中TiO<sub>2</sub>的电子传递性能



# 快速检索 ( $\text{TiO}_2$ )

Springer Materials » Sign up / Log in

TiO2 "transport properties" More search tools ▾

Home • Contact us

检索式 : TiO2 "transport properties"

**Refine Your Search**

**Data Source**

<input type="checkbox"/> Landolt-Börnstein	13
--	----

**Discipline**

<input type="checkbox"/> Biophysics	1
<input type="checkbox"/> Electromagnetism	13
<input type="checkbox"/> Geo- And Astrophysics	3
<input type="checkbox"/> Molecules And Radicals	1
<input type="checkbox"/> Optics	11
<input type="checkbox"/> Particle, Nuclear And Atomic Physics	3
<input type="checkbox"/> Solid-State Physics	12
<input type="checkbox"/> Thermodynamics	1

**Properties**

<input type="checkbox"/> Absorption	1
<input type="checkbox"/> Absorption Coefficient	1
<input type="checkbox"/> Activation Energy Of Resistivity	1

**13 Result(s) for 'TiO2 "transport properties"'**

Page 1 of 1

Landolt-Börnstein - Group III Condensed Matter

**Titanium oxide (TiO<sub>2</sub>): transport properties in stoichiometric TiO<sub>2</sub> (rutile)**

This document is part of Subvolume D 'Non-Tetrahedrally Bonded Binary Compounds II' of Volume 41 'Semiconductors' of Landolt-Börnstein - Group III Condensed Matter. Titanium oxide (Ti...

---

Landolt-Börnstein - Group III Condensed Matter

**Titanium oxide (TiO<sub>2</sub>): physical properties of anatase**

This document is part of Subvolume D 'Non-Tetrahedrally Bonded Binary Compounds II' of Volume 41 'Semiconductors' of Landolt-Börnstein - Group III Condensed Matter. Titanium oxide (Ti...

---

Landolt-Börnstein - Group III Condensed Matter

# 锐钛矿型TiO<sub>2</sub>的电子传递情况



Springer Materials

substance: titanium oxide (TiO<sub>2</sub>)

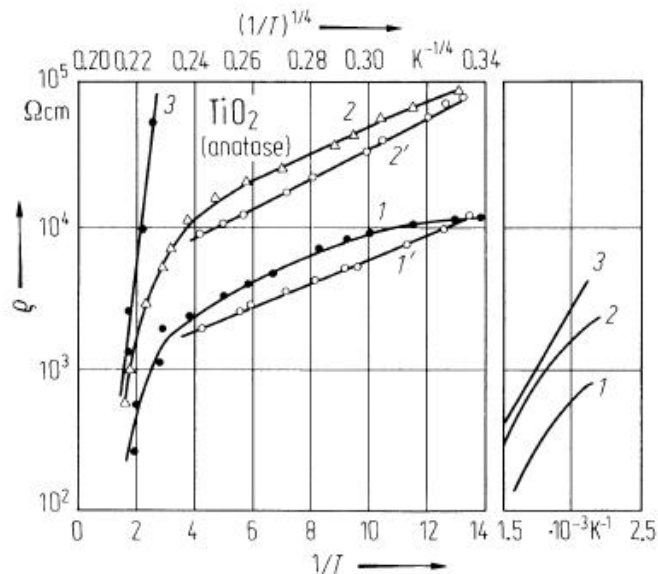
property: physical properties of anatase

energy gap

» Sign up / Log in

Fig. 5.

TiO<sub>2</sub>. Electrical resistivity of anatase modification vs. temperature. Curves 1...3:  $\rho$  vs.  $10^3/T$  for three (unoriented) samples of differing dopant level; curves 1', 2':  $\rho$  vs.  $(1/T)^{1/4}$  for the two (unoriented) samples of lower resistivity [78V].



# 元素周期表检索 ( Al-O )

## Search by Elements

Search for information by element system

1	H	2	He																																
3	Li	4	Be																																
5	B	6	C	7	N	8	O	9	F	10	Ne																								
11	Na	12	Mg																																
13	Al	14	Si	15	P	16	S	17	Cl	18	Ar																								
19	K	20	Ca	21	Sc	22	Ti	23	V	24	Cr	25	Mn	26	Fe	27	Co	28	Ni	29	Cu	30	Zn	31	Ga	32	Ge	33	As	34	Se	35	Br	36	Kr
37	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
55	Cs	56	Ba	*	72	Hf	73	Ta	74	W	75	Re	76	Os	77	Ir	78	Pt	79	Au	80	Hg	81	Tl	82	Pb	83	Bi	84	Po	85	At	86	Rn	
87	Fr	88	Ra	**	104	Rf	105	Db	106	Sg	107	Bh	108	Hs	109	Mt	110	Ds	111	Rg	112	Cn	113	114	115	116	117	118							

*	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
**	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

  = No results in SpringerMaterials when combined with your selection

### Your Selection

Al-O

3504 Matching element systems

Al-O (232)  
 Ag-Al-O (31)  
 Al-Am-O (2)  
 Al-Ar-O (1)  
 Al-As-O (16)  
 Al-Au-O (3)  
 Al-B-O (27)  
 Al-Ba-O (51)  
 Al-Be-O (20)  
 Al-Bi-O (14)  
 Al-Br-O (3)  
 Al-C-O (24)

Reset

# 元素周期表检索 ( Al-O )

## Refine Your Search

Data Source	
<input type="checkbox"/> Inorganic Solid Phases	168
<input type="checkbox"/> Landolt-Börnstein	61
<input type="checkbox"/> MSI Eureka	3

Discipline	
<input type="checkbox"/> Advanced Technologies	153
<input type="checkbox"/> Biophysics	155
<input type="checkbox"/> Electromagnetism	168
<input type="checkbox"/> Geo- And Astrophysics	8
<input type="checkbox"/> Mechanics	17
<input type="checkbox"/> Molecules And Radicals	23
<input type="checkbox"/> Optics	10
<input type="checkbox"/> Particle, Nuclear And Atomic Physics	72
<input type="checkbox"/> Solid-State Physics	181
<input type="checkbox"/> Thermodynamics	25

Properties	
<input type="checkbox"/> Absorption	1
<input type="checkbox"/> Absorption Coefficient	1
<input type="checkbox"/> Activation Energy	1
<input type="checkbox"/> Activity	1
<input type="checkbox"/> Adsorbate Coverage	1
<input type="checkbox"/> Adsorption	1
<input type="checkbox"/> Asymmetry Parameter	2
<input type="checkbox"/> Atomic Defect Properties	1
<input type="checkbox"/> Atomic Environment	130

## 232 Result(s) for 'Al-O'

Page 1 of 12

MSI Eureka © 2013 Report ID: 20.17148.1.1

### Al-O Binary Phase Diagram Evaluation

Phase diagrams, crystallographic and thermodynamic data

The Al-O system is a part of industrially important... Review of experimental data for the Al-O system is presented in [

MSI Eureka

### Phase diagram of the Al-O system

Temperature: 427...3727 °C

Concentration Range: Al conc. [100-0 at.%] / O conc. [0-100 at.%]

Part of report on 'Al-O Binary Phase Diagram Evaluation'

MSI Eureka

### Temperature - composition phase diagram of the Al-O system

Temperature: 427...3727 °C

Concentration Range: Al conc. [100-0 at.%] / O conc. [0-100 at.%]

Part of report on 'Al-Fe-O Ternary Phase Diagram Evaluation'

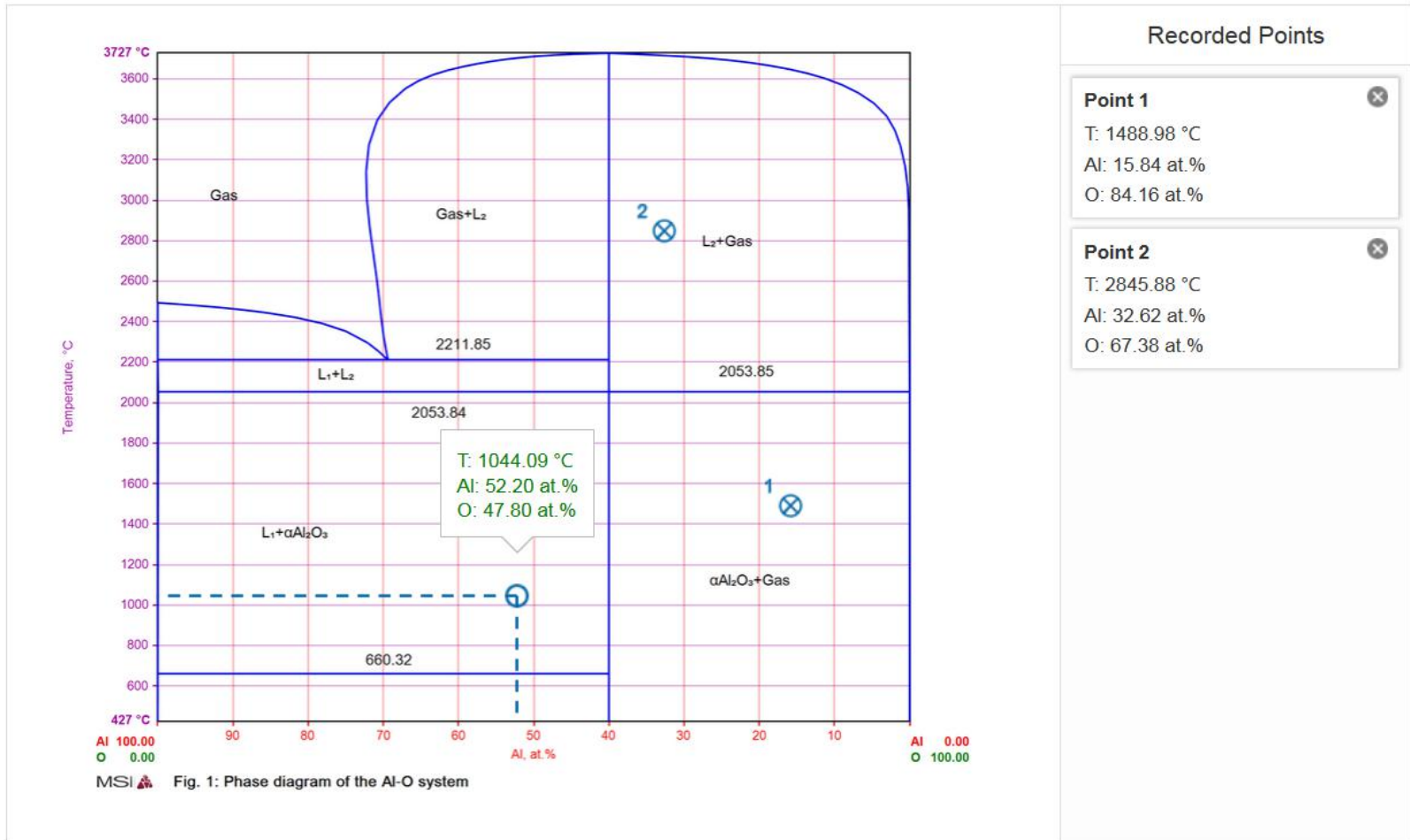
Landolt-Börnstein - Group III Condensed Matter

### Al<sub>2</sub>O<sub>3</sub> γ

This document is part of Subvolume A9 'Structure Types. Part 9: Space Groups (148) R-3 - (141) I41' of Volume 43 'Crystal Structures of Inorganic Compounds' of Landolt-Börnstein - Group III 'Condensed Matter'.



# 拥有精确坐标的交互式相图



# 结构检索：对二甲苯 (PX)

## Search by Structure

Start by drawing a structure

The image shows a chemical structure drawing interface. At the top, there is a toolbar with various drawing tools. The main canvas displays the structure of p-xylene (1,4-dimethylbenzene), which is a benzene ring with two methyl groups attached at the para positions. A blue "Search" button is located at the bottom right of the interface.

Reset	↶	↷	✍	➤	↻	+	→	⬡	—	⋈	A	[ ]	🔧	i	InfoChem
△	□	⬡	⬢	⬣	⬤	⬥	⬦	⬧	⬨	⬩	⬪				

Search

# 结构检索结果（相似度排序）

701 Result(s) for this structure

Page 1 of 36

## 1,4-Dimethyl-Benzene

Molecular Formula: C<sub>8</sub>H<sub>10</sub>

Molecular Mass: -

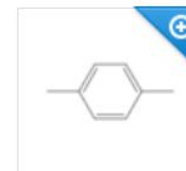
CAS-No: 106-42-3

快速检索

InChI: InChI=1S/C8H10/c1-7-3-5-8(2)6-4-7

InChI Key: MLBVBO-UHFFFAOYSA-N

[» View substance profile](#) [» Search for this substance](#)



100 % match

物质概况

## 1,4-Methyl-

Molecular Formula: C<sub>9</sub>H<sub>8</sub>

Molecular Mass: -

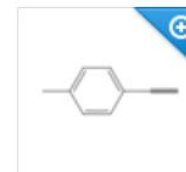
CAS-No: 766-97-2

InChI: InChI=1S/C9H8/c1-3-9-6-4-8(2)5-7-9

/h1,4-7H,2H3

InChI Key: KSZVOXHGCKKOLL-UHFFFAOYSA-N

[» View substance profile](#) [» Search for this substance](#)



91 % match

## 4-Methyl-Benzonitrile

Molecular Formula: C<sub>8</sub>H<sub>7</sub>N

Molecular Mass: -

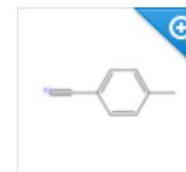
CAS-No: 104-85-8

InChI: InChI=1S/C8H7N/c1-7-2-4-8(6-9)5-3-7

/h2-5H,1H3

InChI Key: VCZNNAKNUVJVGX-UHFFFAOYSA-N

[» View substance profile](#) [» Search for this substance](#)



90 % match

# 物质概况

Substance Profile

1,4-Dimeth

General inform

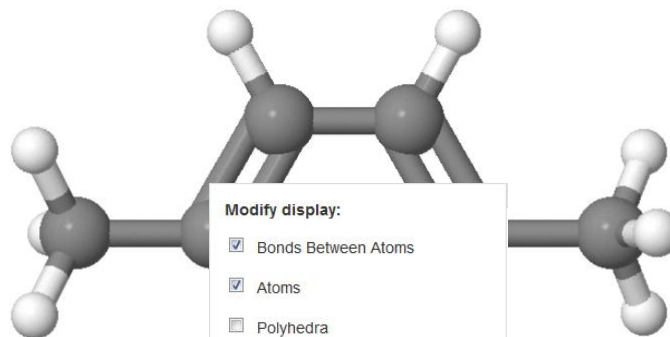
Molecular Formula:  $C_8H_{10}$

Element System: C-H

CAS-RN: 106-42-3

InChI: InChI=1S/C8H10/c1

## 交互式3D分子结构



### Modify display:

- Bonds Between Atoms
- Atoms
- Polyhedra
- Spin

### Measurement options:

- Distance Measurement
- Angle Measurement
- Torsion Angle Measurement
- Deactivate measurement options

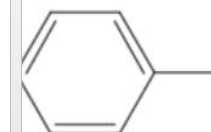
Export JPG image

Export PNG image

Export Options ▾

More Options ▾

JSmol



View  
Interactive  
Structure >

## ▶ 3D Interactive

## ▼ Information on Springer Materials

Properties frequently appearing with 1,4-dimethyl-benzene

» Osmotic Pressure (167)

» Vapor-Liquid Equilibrium (151)

» Excess Volume (99)

» Heat Of Mixing (91)

» Excess Enthalpy (91)

» Polarization Degree (9)

» Luminescence Emission Linewidth (9)

» Luminescence (9)

» Diffusion (8)

» Chemical Diffusion (8)

» Angular Frequency (1)

» Transition Enthalpy (1)

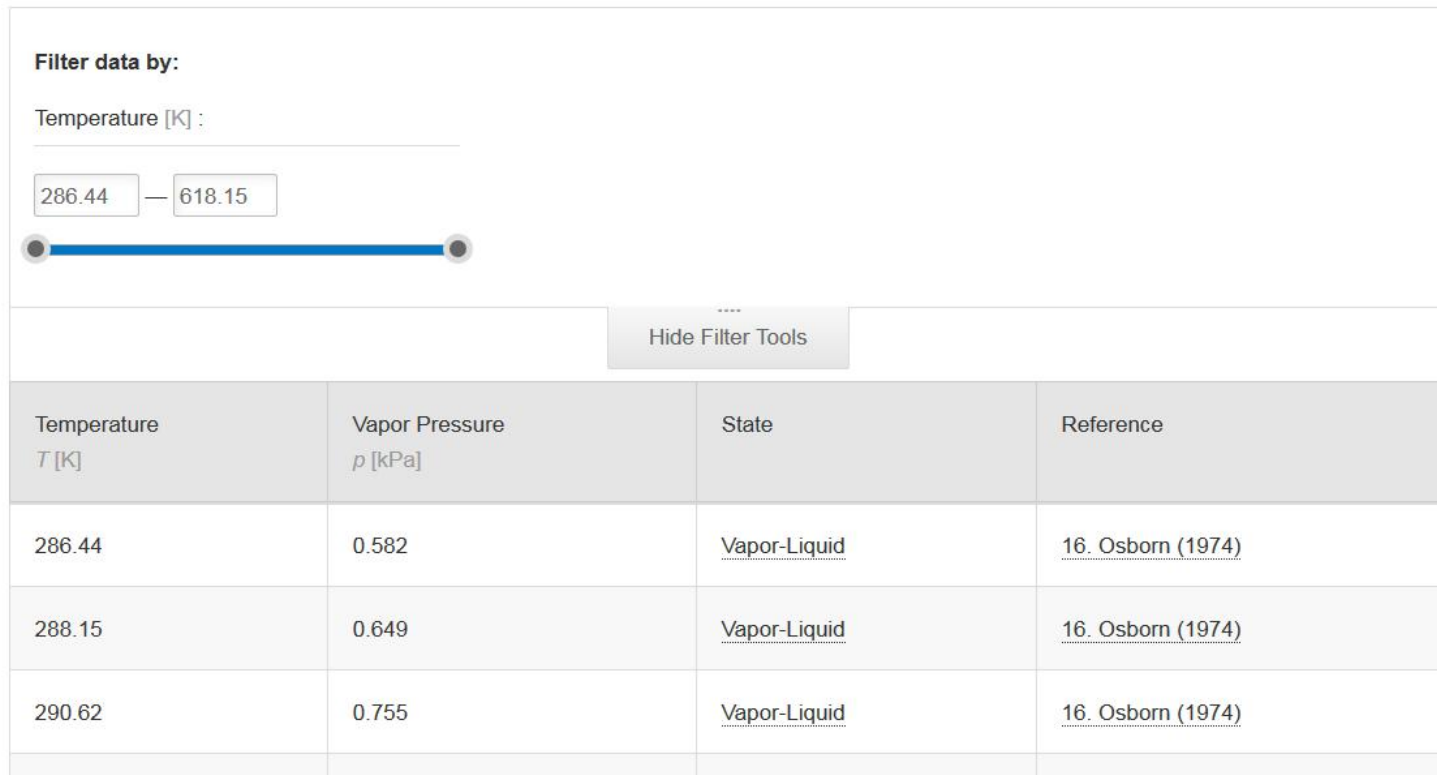
» Internuclear Distance (1)

» Differential Scanning Calorimetry (1)

» Phase Transition Temperature (1)

# 提供用于数据筛选的滑动条

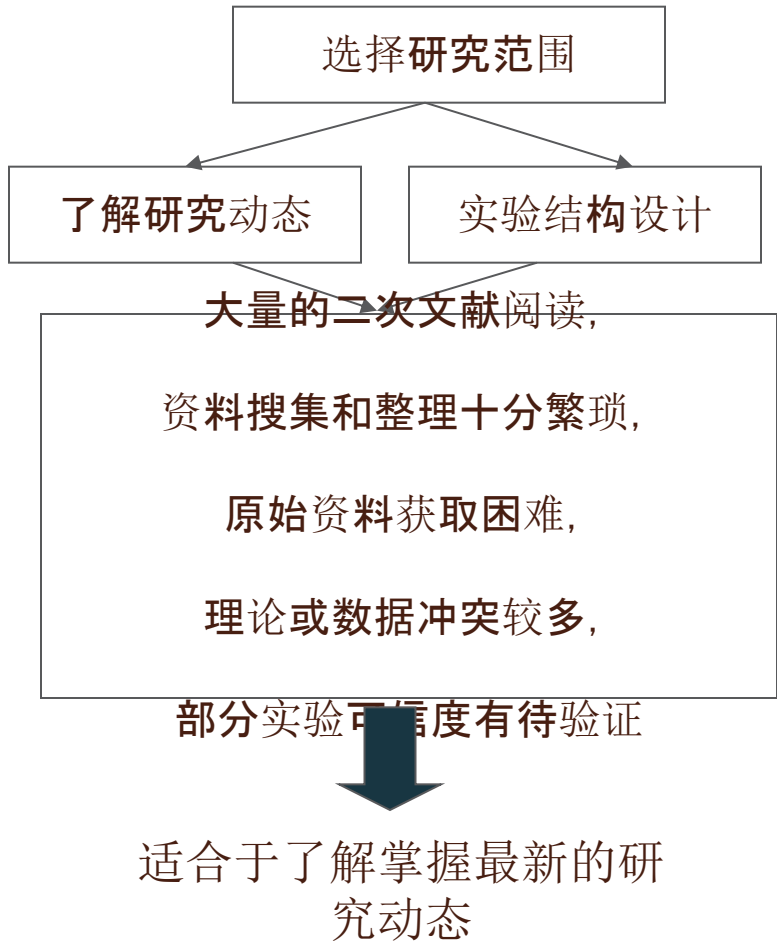
## ▼ Vapor Pressure of p-Xylene



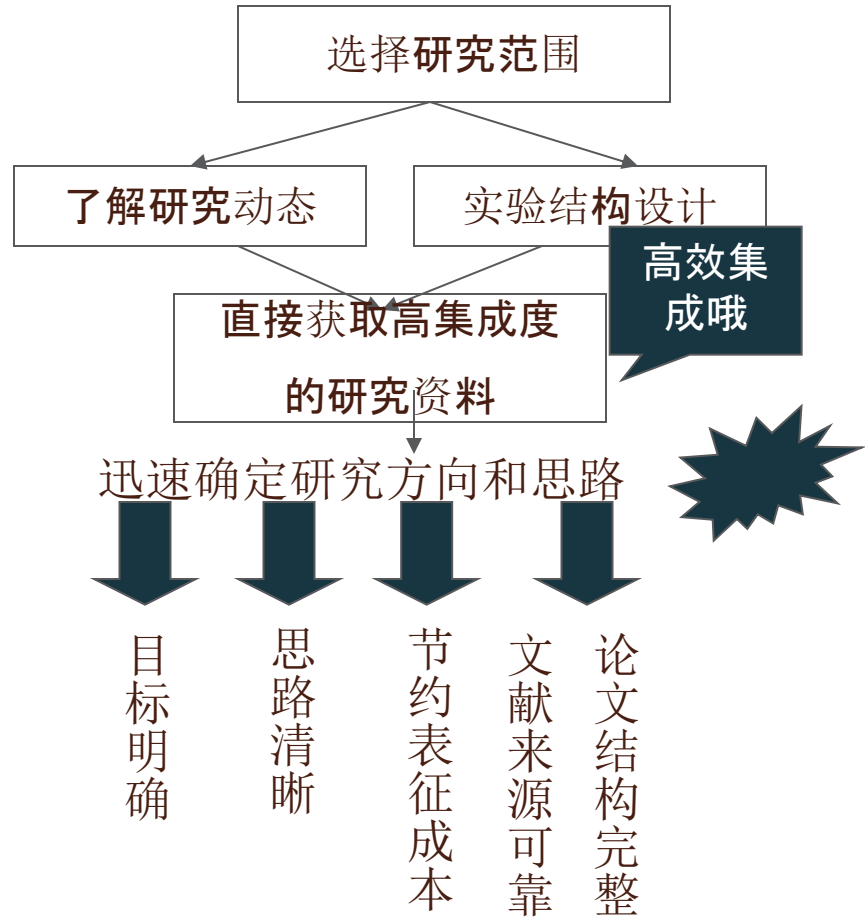
## ▼ References (102)

1. Panchenkov G.M., Maksareva T.S., Erchenkov V.V.: Temperature Dependence of Diffusion Coefficients of Some Organic Liquids. Zh.Fiz.Khim. 32 (1958) 2787-2791
2. Ambrose D., Broderick B.E., Townsend R.: The vapour pressures above the normal boiling point and the critical pressures of some aromatic hydrocarbons. J.Chem.Soc.A (1967) 633-641

# 一般数据库



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A close-up, black and white photograph of a scientist in a white lab coat looking through a microscope. The scientist's face is partially visible, with their eyes focused on the eyepieces. The background is blurred, suggesting a laboratory setting. The image is overlaid with a white and blue graphic design.

Springer Nature 实验室指南平台  
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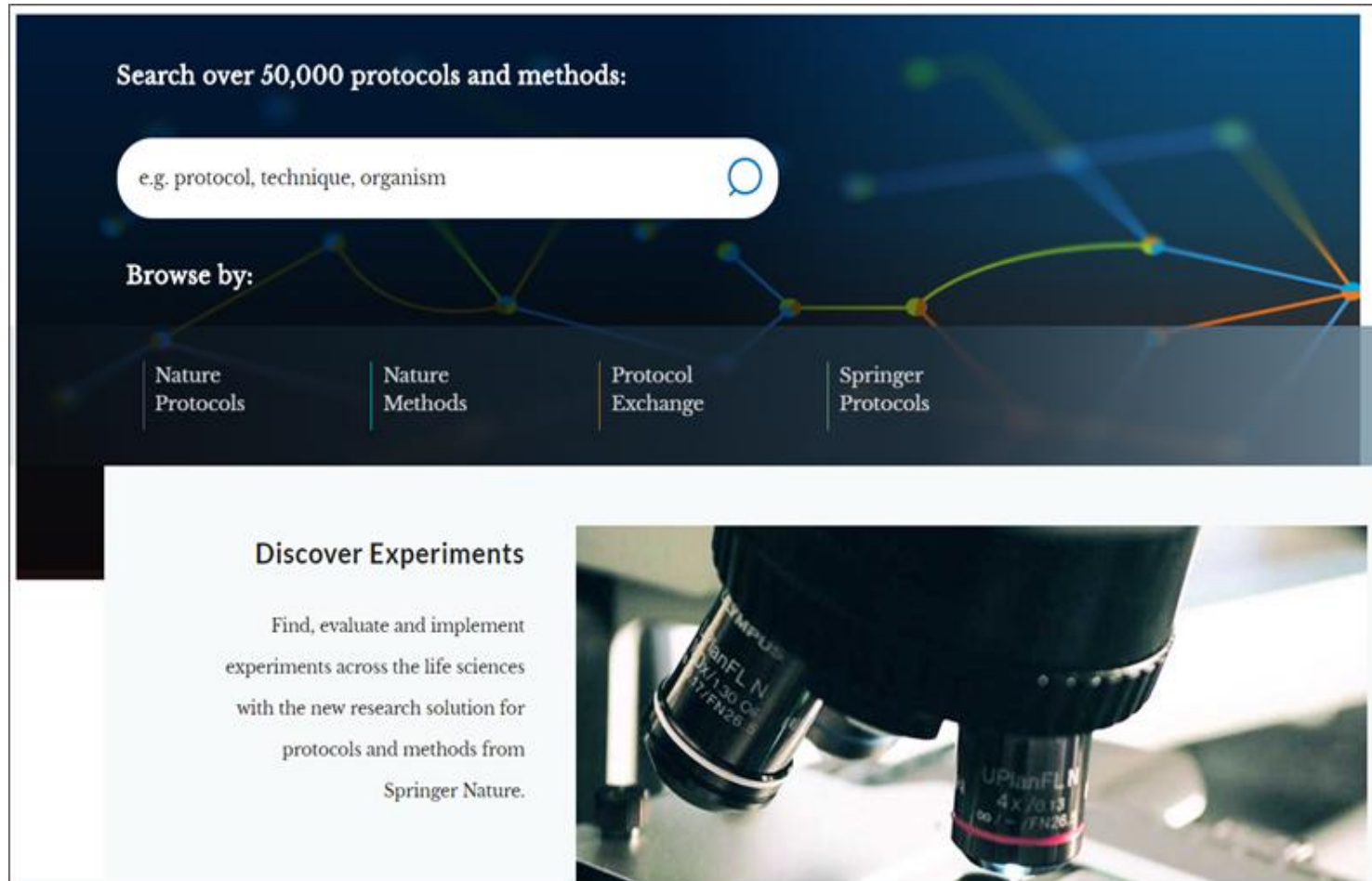
# 目前包括两个数据平台

The screenshot shows the SpringerLink search results page. At the top, there is a search bar with the text 'sifflin Protocol' and a search button. Below the search bar, the page indicates '46,364 Result(s)'. On the left side, there is a 'Refine Your Search' section with various filters: 'Context Type' (Protocol), 'Discipline' (Life Sciences, Biomedicine, Medicine & Public Health, Chemistry, Pharmacy), 'Subdiscipline' (Cell Biology, Biochemistry: general, Human Genetics, Protein Science, Neurosciences), and 'Language' (English). The main content area displays three search results, each with a title, authors, and a brief description. The first result is 'Immunohistochemical Detection of Sphingosine-1-Phosphate and Sphingosine Kinase-1 in Human Tissue Samples and Cell Lines' by Gary M. Reynolds, Barbara Vazanti, and Roger Sabbadini (2017). The second result is 'Decellularization Methods for Scaffold Fabrication' by Sweeta K. Gupta, Narayan C. Mishra (2017). The third result is 'An Improved Isoform-Selective Assay for Sphingosine Kinase 1 Activity' by Melissa R. Pitman, Lorena T. Davis, and Stuart M. Pitson (2017). Each result includes a 'Download PDF' and 'View Protocol' link.

The screenshot shows the Nature Protocols journal homepage. At the top, there is a navigation bar with the journal title 'nature protocols' and a search bar. Below the navigation bar, there are several featured articles and announcements. The main article is 'A graphical interface to integrate X-ray diffraction data FREE' by Harold Powell, T Geoff Batty, Luke Kottgiannis, Owen Johnson, and Andrew Leslie. To the right, there is a 'Current issue' section with links to 'Current issue', 'Subscribe', and 'Recommended to library'. Below the main article, there are two smaller featured articles: 'Quantitative proteomics: challenges and opportunities in basic and applied research' by Schubert et al., and 'Chemically induced mouse models of acute and chronic intestinal inflammation' by Wetz et al. At the bottom, there is an 'Announcements' section with '10 years of Nature Protocols' and 'Protocol Exchange - open access protocols uploaded by researchers'. On the right side, there is a 'Browse by subject' section and a 'Science jobs' section. At the bottom right, there is a 'nature events directory' section with 'Events of the week' and '18th Annual Drug Discovery Summit 12 June 2017 - 13 June 2017'.

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The screenshot displays the Springer Nature Experiments search results page for the query "crispr". The page features a search bar with the query "crispr" and a magnifying glass icon. Below the search bar, it indicates "527 results for 'crispr' + 'CRISPR'".

On the left side, there are several filter sections:

- Publication Year:** Includes input fields for "2006" and "2017", and a range slider.
- Video:** A checkbox labeled "Video available" with a count of "11".
- Technique:** A list of techniques with counts:
 

Technique	Count
<input checked="" type="checkbox"/> CRISPR	527
<input type="checkbox"/> PCR	304
<input type="checkbox"/> Genetic Engineering	269
<input type="checkbox"/> Cell And Tissue Culture	219
<input type="checkbox"/> Genomics	219

On the right side, the search results are sorted by "Citations". Two results are visible:

- Nature Protocols (2013) Protocol:**
  - Title:** Genome engineering using the CRISPR-Cas9 system
  - Authors:** F Ann Ran, Patrick D Hsu, Jason Wright, Visonta Agarwala ... Feng Zhang
  - Abstract:** Targeted nucleases are powerful tools for mediating genome alteration with high precision. The RNA-guided Cas9 nuclease from the microbial clustered regularly interspaced short palindromic repeats (CRISPR) adaptive immune system can be used to ...more
  - Techniques:** PCR, CRISPR, Transfection, FACS, Genetic Engineering
  - Organisms:** Escherichia coli, Homo sapiens, Primary Cell Line
  - Citations:** 868 | **Views:** 868
- Nature Methods (2013) Perspective:**
  - Title:** Cas9 as a versatile tool for engineering biology
  - Authors:** Prashant Mali, Kevin M Ervelt, George M Church
  - Abstract:** RNA-guided Cas9 nucleases derived from clustered regularly interspaced short palindromic repeats (CRISPR)-Cas systems have dramatically transformed our ability to edit the genomes of diverse organisms. We believe tools and techniques based on Cas9, a ...more

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- **图片以及视频综述**

**SPRINGER NATURE** Experiments e.g. protocol, technique, organism

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**Heritable genome editing in *C. elegans* via a CRISPR-Cas9 system**

**nature:methods**  
 Vol: 10 (2013) > Issue: 8 (August)  
 Brief Communication | 30 June 2013 | DOI: 10.1038/nmeth.2532  
 Authors: Ari E Friedland<sup>1</sup>, Yonatan B Tzur<sup>2</sup>, Kevin M Esvelt<sup>2</sup>, Monica P Colaiacovo<sup>2</sup>, ... John A Calarco<sup>1</sup> [more](#)  
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[Full text](#)

---

**KEYWORDS**

**Mentions**

[PCR](#), [CRISPR](#), [Reverse Transcription PCR](#), [Genotyping](#), [Overlap Extension PCR](#), [CRISPR-Cas9 Editing](#), [Genome Visualization](#), [RNA Extraction](#), [Gibson Assembly](#), [Microinjection](#), [Genetic Engineering](#), [Chain Termination Sequencing](#), [Plasmid Construction](#), [Caenorhabditis elegans](#)

**Additionally about**

[Genetics](#)

**CITATIONS**

Year	Citations
2014	15
2015	15
2016	25
2017	15

**VERSIONS**

No versions available

---

**Abstract**

We report the use of clustered, regularly interspaced, short palindromic repeats (CRISPR)-associated endonuclease Cas9 to target genomic sequences in the *Caenorhabditis elegans* germ line using single-guide RNAs that are expressed from a U6 small ...

---

**Citations (252)**

2015 Olivia Schwarz, ELife

2012 Aljoscha Nern, pNAS

2011 D. M. Vallejo, Science [See all >](#)

---

**FIGURES & VIDEOS**

Figure 1: Vectors that drive expression of Cas9 and sgRNAs in *C. elegans*.

Strain:	Cas9 only		sgRNA only		Cas9 + sgRNA	
	+	-	+	-	+	-
Reverse transcriptase	+	-	+	-	+	-
Cas9-GV40 NLS	+	-	+	-	+	-
unc-119 sgRNA	-	+	-	+	-	+
act-4	-	-	-	-	-	-

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- ✓ 传统研究领域 to ✓ 最近的研究方向
- ✓ 详细的实验步骤说明 to ✓ 简短的实验技术介绍

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# SpringerProtocols的主界面

## – Homepage

The screenshot shows the SpringerProtocols homepage with the following elements and callouts:

- 1**: Search Protocols search bar with an "Advanced Search" link.
- 2**: Browse by Subject section, listing various scientific fields such as Biochemistry, Bioinformatics, and Cancer Research.
- 3**: Most Popular Protocols section, featuring a list of trending articles like "Generating Murine Osteoclasts from Bone Marrow".
- 4**: New Protocols section, displaying the latest uploads such as "Current Status of the Polyamine Research Field".
- 5**: A vertical sidebar on the left containing navigation and utility links: Mobile, Upload a Protocol, Protocol Alert, Video Protocols, Comments, Favorites, and RSS.
- 6**: Inside SpringerProtocols section, providing quick access to Source Title List, New Protocols, Free Protocols, Popular Protocols, and other resources.

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4. 最新上传的protocols
5. 互动工具
6. Inside SpringerProtocols

Intro

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Additional Info

# SpringerProtocols的简单检索及高级检索

The image shows the SpringerProtocols search interface. At the top, there is a 'Search Protocols' section with a search bar and a 'Search' button (1). Below this is the main 'SpringerProtocols' header with a 'SEARCH' bar and a 'Go' button (2). To the right is an 'Advanced Search' section. In the 'Advanced Search' section, there are several fields: 'Text', 'Abstract', and 'Title' (each with radio buttons for 'all', 'any', and 'exact phrase'); 'Author/Editor' with an example 'e.g. Smith JS, Jones D'; 'Series' with a dropdown menu (3) showing options like 'Methods in Biotechnology', 'Methods in Molecular Biology', etc.; 'Volume No.'; 'EISBN'; 'Subject' with a dropdown menu (4) showing options like 'Biochemistry', 'Bioinformatics', etc.; and 'Year' with 'Year through Year' dropdowns. At the bottom of the 'Advanced Search' section, there are 'Sort by' and 'Results' options, and 'Search' and 'Clear' buttons.

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4. SpringerProtocols允许您通过系列图书和学科筛选您的研究.

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点击页面左侧导航栏，进一步根据二次检索、子学科和出版年限定浏览结果

The screenshot displays the SpringerProtocols website interface. At the top, there is a search bar with a 'Go' button and a link to 'ADVANCED SEARCH'. Below the search bar, a navigation menu includes 'HOME' and 'MY AC'. A blue arrow points from the search bar area to the left-hand navigation menu.

**Left-hand Navigation Menu:**

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  - Go button
- Browse by Subject**
  - Analytical Chemistry (240)
  - Bioengineering (61)
  - Biomaterials (42)
  - Biomedicine (95)
  - Nucleic Acid Chemistry (201)
  - Organic Chemistry (33)
  - Proteomics (107)
- Browse by Year**
  - 2008 (86)
  - 2005-2007 (431)
  - 2002-2004 (394)

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Home » Biochemistry

## Protocols in Biochemistry

Results 1 - 10 of 1846 1 2 3 4 5 6 7 8 9 10 Next>>

Standard Condensed Sort results by: Relevance 10 per page

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**Author(s):** Timothy P. Plackett, Elizabeth J. Kovacs  
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 Abstract | Full Text | PDF (1321K)

**A Voluntary Oral-feeding Rat Model for Pathological Alcoholic Liver Injury**  
**Author(s):** George L. Tipoe, Emily C. Liang, Tung-Ming Leung, Amin A. Nanji  
**Pub. Date:** May-02-2008; **DOI:** 10.1007/978-1-59745-242-7\_2  
 Abstract | Full Text | PDF (1523K)

**Intragastric Ethanol Infusion Model in Rodents**  
**Author(s):** Hide Tsukamoto, Hasmik Mkrtchyan, Alla Dynnyk  
**Pub. Date:** May-02-2008; **DOI:** 10.1007/978-1-59745-242-7\_3  
 Abstract | Full Text | PDF (5551K)

**A Practical Method of Chronic Ethanol Administration in Mice**  
**Author(s):** Ruth A. Coleman, Betty M. Young, Lucas E. Turner, Robert T. Cook  
**Pub. Date:** May-02-2008; **DOI:** 10.1007/978-1-59745-242-7\_4



# SpringerProtocols的浏览

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1. Introduction
2. Materials
  - 2.1. Solution Recipes and E...
  - 2.2. Membranes
  - 2.3. Common PrP Antibodies
  - ...
3. Methods
  - 3.1. Western Blot
  - 3.2. Dot Blot and PK Digest...
  - 3.3. Immunoprecipitation of...
  - 3.4. Blot Storage Procedure...
4. Notes
- References 

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### 3. Immunodetection of PrP<sup>Sc</sup> Using Western and Slot Blotting Techniques

By: Hanna Gyllberg<sup>1</sup>, Kajsa Löfgren<sup>1</sup>

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#### Abstract

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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

**Book Title:** [Prion Protein Protocols](#)

**Series:** Methods in Molecular Biology | **Volume:** 459 | **Pub. Date:** Jun-04-2008 | **Page Range:** 35-48 | **DOI:** 10.1007/978-1-59745-234-2\_3

**Subject:** [Protein Science](#)

**Key Words:** [Dot blot](#) - [guanidinium thiocyanate](#) - [immunoprecipitation](#) - [nitrocellulose membrane](#) - [proteinase K digestion](#) - [PrP antibodies](#) - [PVDF membrane](#) - [reprobing](#) - [Western blot](#)

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  - 2.2 Determination of Sample...
  - 2.3 MWProcessing Steps for ...
- 3 Results
- 4 Discussion
- References

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**1. Overview of Microwave-Assisted Tissue Processing for Transmission Electron Microscopy**  
**By:** Richard S. Demaree Jr.<sup>3</sup>, Richard T. Giberson<sup>4</sup>

**Abstract**

[Full Text](#) | [Download PDF \(1384K\)](#)

The purpose of this book is to provide new, reliable, and recently updated protocols for processing many different kinds of samples, using microwave (MW) technology. Chapters included deal with a wide variety of methods and samples, everything from paraffin processing for light microscopy (LM) to scanning and transmission electron microscopy (TEM), to immunocytochemistry.

**Affiliation(s):** (3) Department of Biological Sciences, California State University, Chico, CA  
 (4) Ted Pella Inc., Redding, CA

**Book Title:** [Microwave Techniques and Protocols](#)

**Series:** No Series | **Year:** 2001 | **Page Range:** 1-11 | **DOI:** 10.1007/978-1-59259-128-2\_1

**Subject:** [Biochemistry](#)

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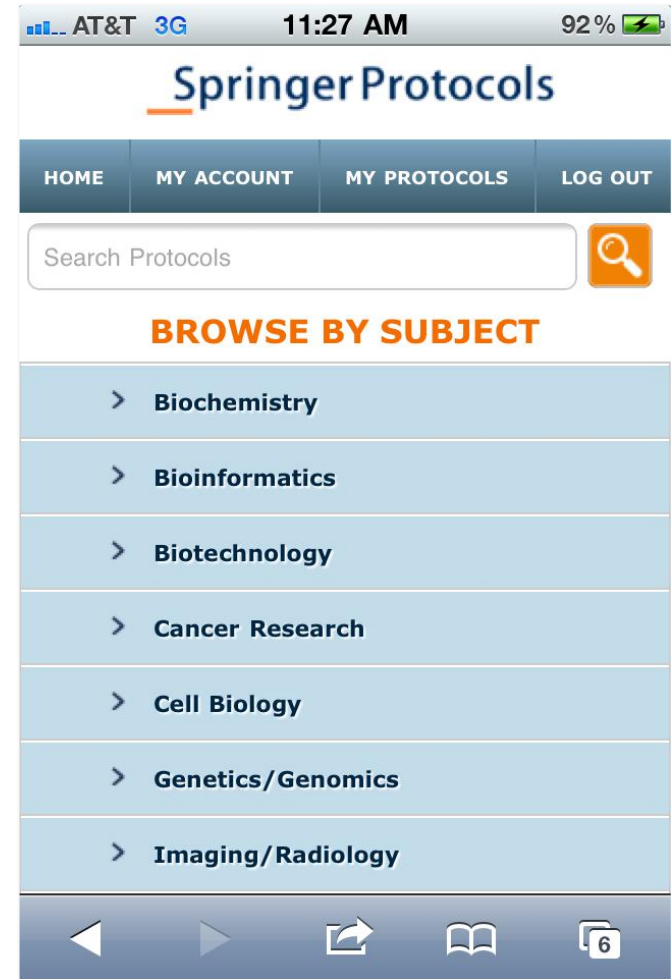
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