SPRINGER NATURE

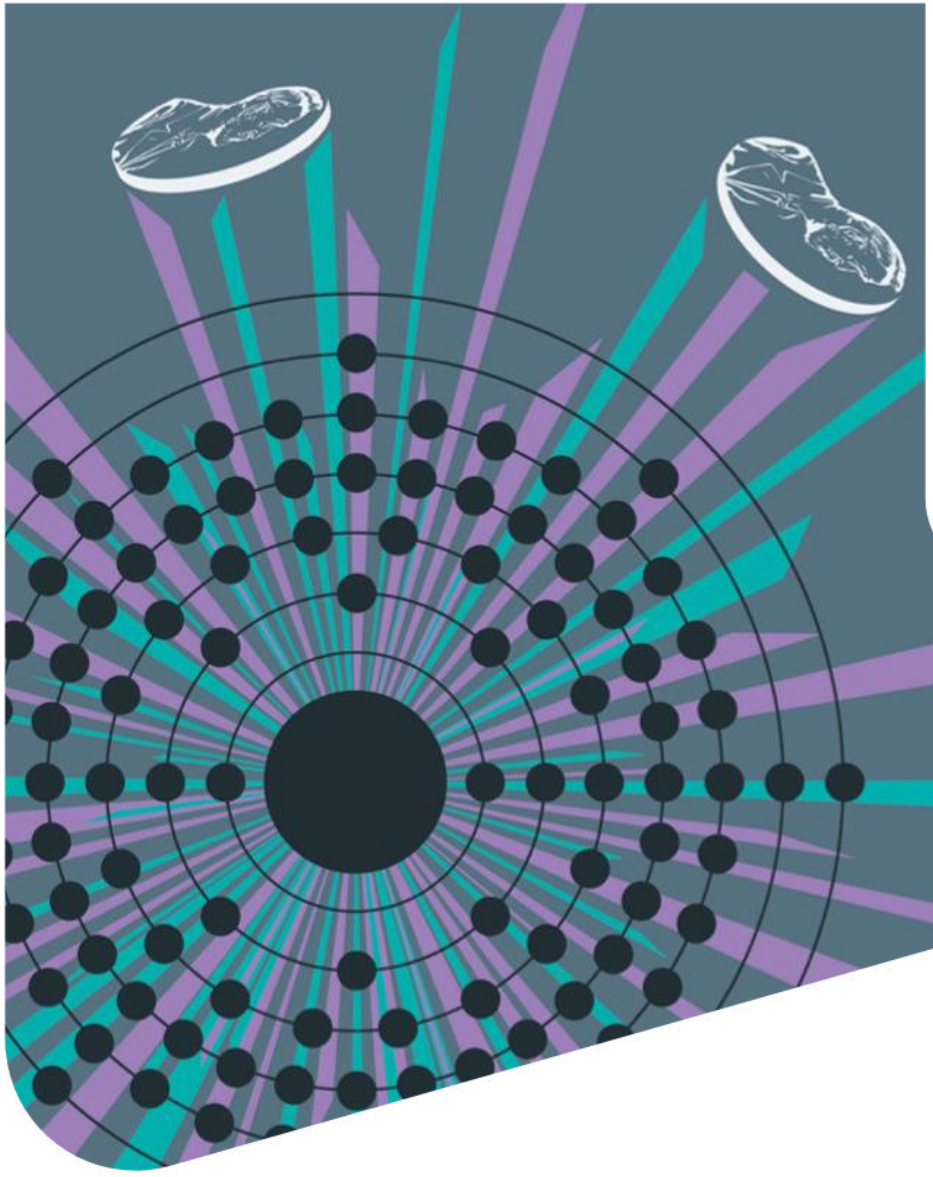


Illustration inspired by the work of Alfred Nobel

Springer Nature 解决方案类产品功能介绍及技术进展：

Springer Materials 与 Springer Protocols

ADVANCING DISCOVERY

内容概括

1	情报分析及科研人员信息搜索过程中常见的问题
2	文献资料搜集及汇总的必要性以及问题解决思路
3	Springer Nature 针对重要学科方向的解决方案
4	问题解答

情报分析及科研人员在信息搜索过程中常见的问题

1.0

最大的痛点：不是缺乏信息而是搜索到的信息太多

The Global STM Research [1-3] Landscape in 2017:

8,000,000 active researchers

2,700,000 patent applications

15,000 peer reviewed journals

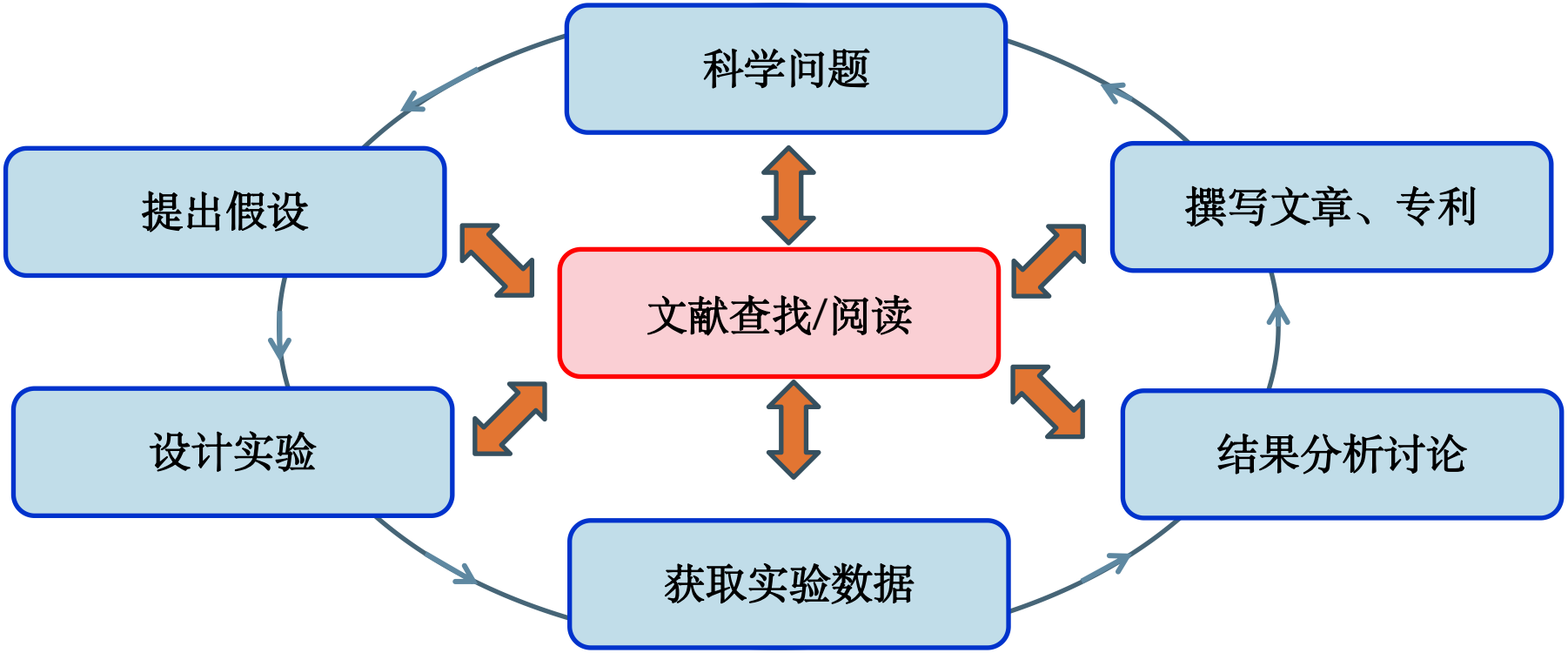
5,500 books released

1,600,000 journal articles published

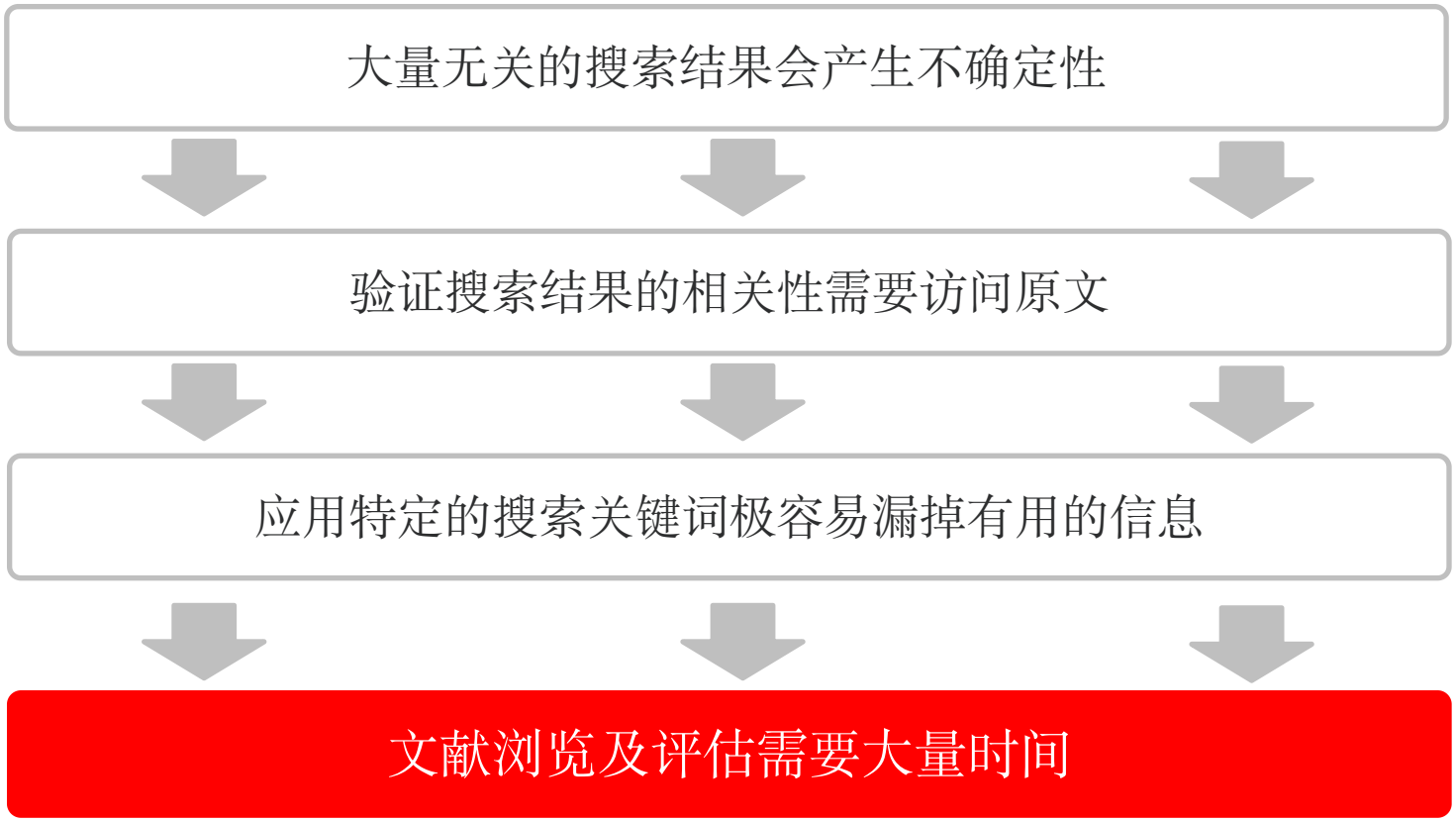
2,000 research data repositories[4]

科研工作流程


建立科学问题
提出假设
设计实验
获取实验数据
结果分析讨论
撰写文章、专利
文章投稿、专利申请


科学问题
提出假设
撰写文章、专利
文献查找/阅读
设计实验
结果分析讨论
获取实验数据

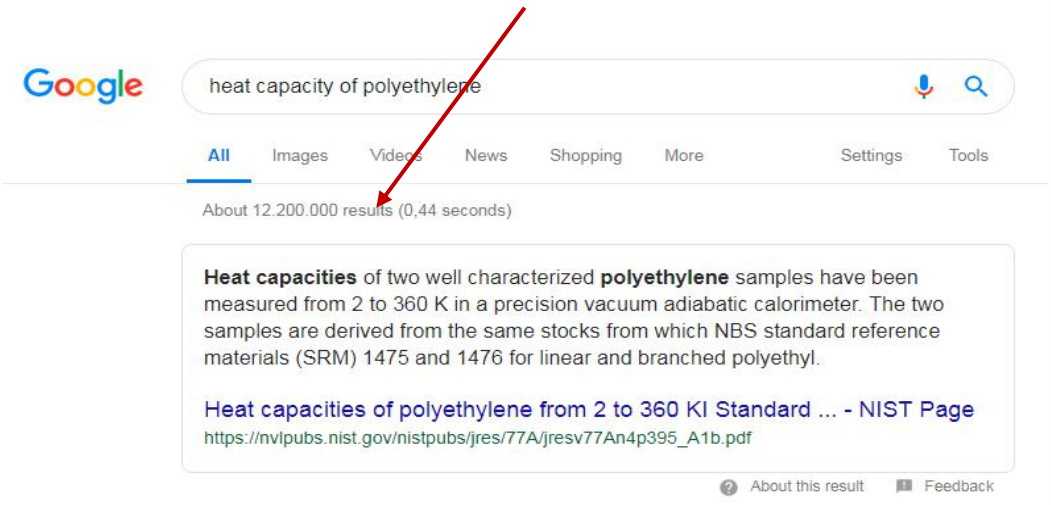
文献资料信息搜索中常见的问题



材料学科相关搜索案例

查询: “聚乙烯的热容”

12,200,000 results



As the amount of scientific information exponentially increases, we understand the need to find **relevant, reliable, critically evaluated** data on-demand.

文献资料信息搜索耗费大量的时间

If 1 researcher searches for about 20 minutes per day:

$$\left(20\ \frac{min}{day}\right) \times \left(250\ \frac{working\ days}{year}\right) \times \left(\frac{1\ hour}{60\ min}\right) = \boxed{83\ \frac{hours}{year}}$$

If 8 million researchers search for 20 minutes per day:

$$\left(8{,}000{,}000\ researchers\right) \times \left(83\ \frac{hours}{year}\right) =$$

$$\boxed{664{,}000{,}000\ \frac{hours}{year} \cdot researcher}$$

文献资料搜集及汇总的必要性及问题解决思路

2.0

主要的问题

对于时间有限的教授和研究员 需要更多时间从大量目标文献中提取感兴趣话题的研究进展

对于刚入组的新生缺乏专业阅读文献的能力，进而很难快速了解从事课题的研究进展以及相应实验的制备方法

具体数值的获取获取 难以从搜索到的文献中快速提取并获得某种材料物理化学性质的特定值

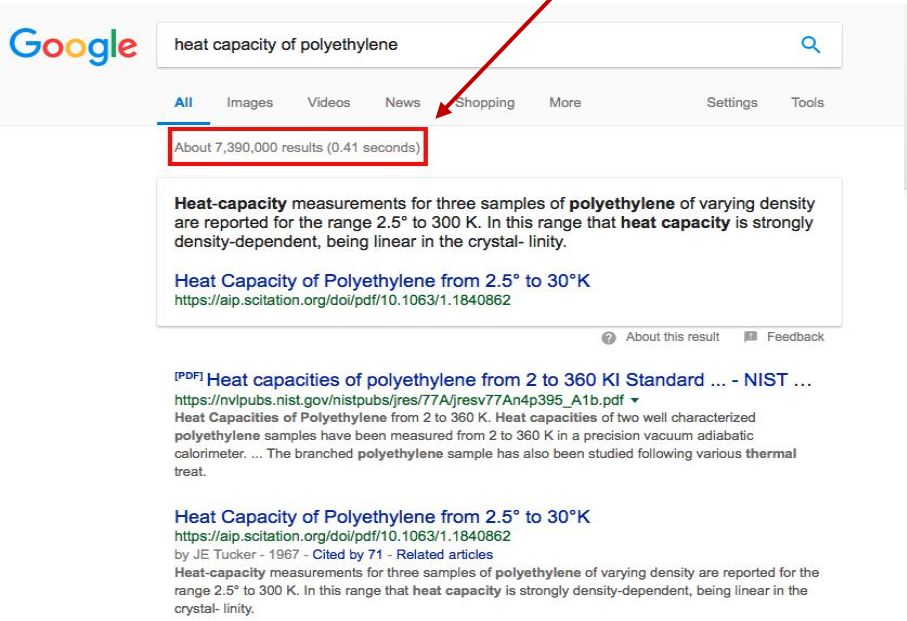
专业的实验室指南平台 相关领域研究者期望准确提取的实验室指南和方法平台可以帮助重复自己的科学实验

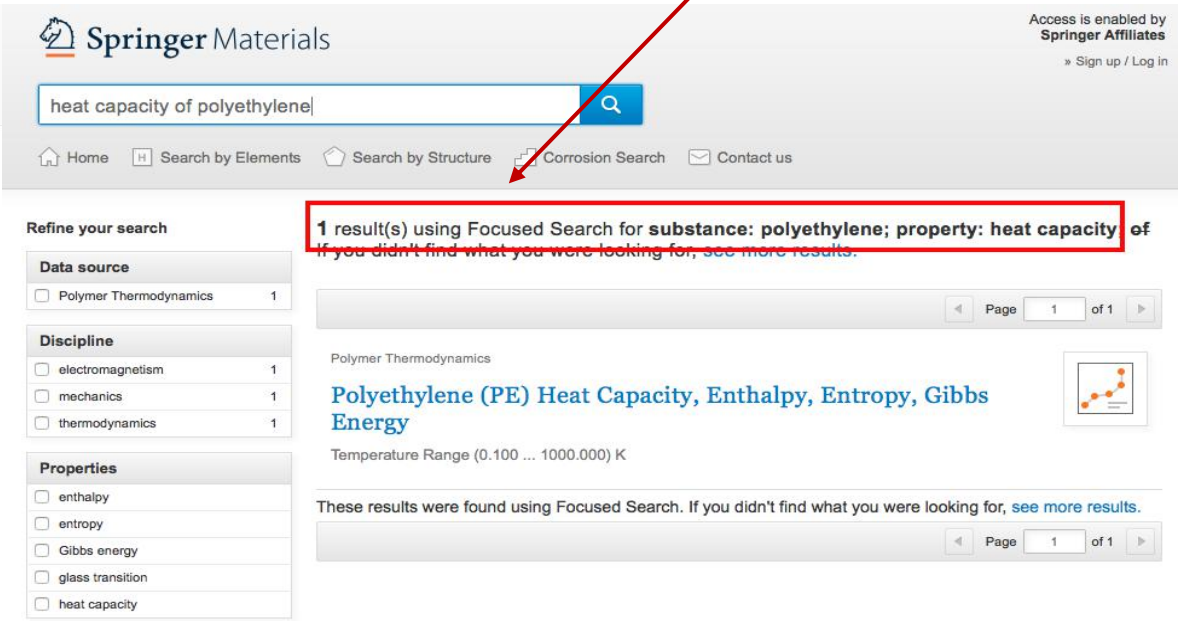
材料学科相关文献资料的收集与汇总

哪个搜索的更好?
举例: “聚乙烯的热容”

7,390,000 results
with pay-walled journal articles and static pdfs
5 minutes

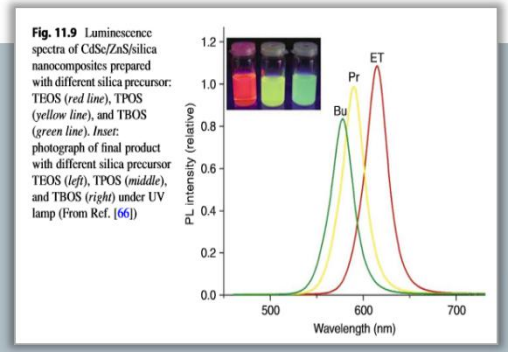
1 result
with a dynamic chart linked directly to primary research
10 seconds

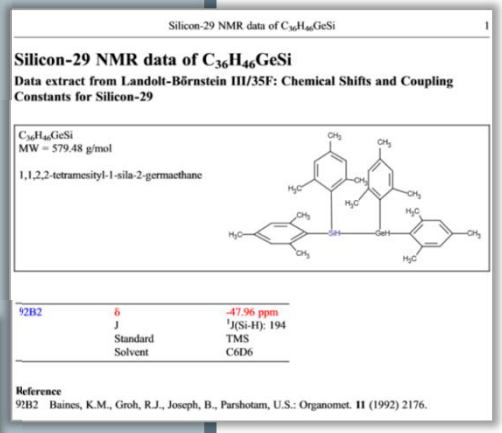


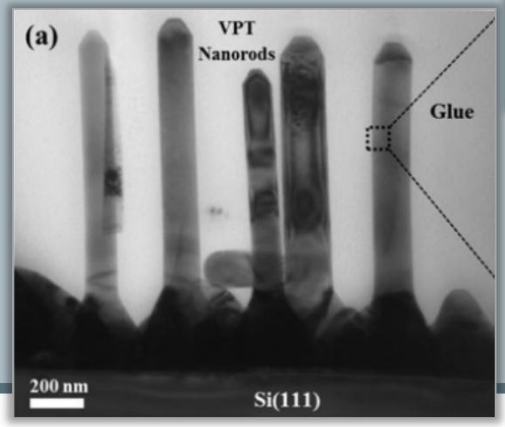


材料分析及表征中具体数值的提取

Spectroscopy and Microscopy







Spectroscopic Data

Large collections of data for all material types (metals, organics, liquids, polymers, etc.)

Key Methods Covered

UV-Vis, IR, Raman, PES, Mössbauer, etc.

NMR Data

- Multiple Nuclei (^{1}H, ^{13}C, ^{19}F, ^{17}O, ^{77}Se)
- Chemical shifts, coupling constants
- Small molecules, polymers, heterocycles

Microscopy

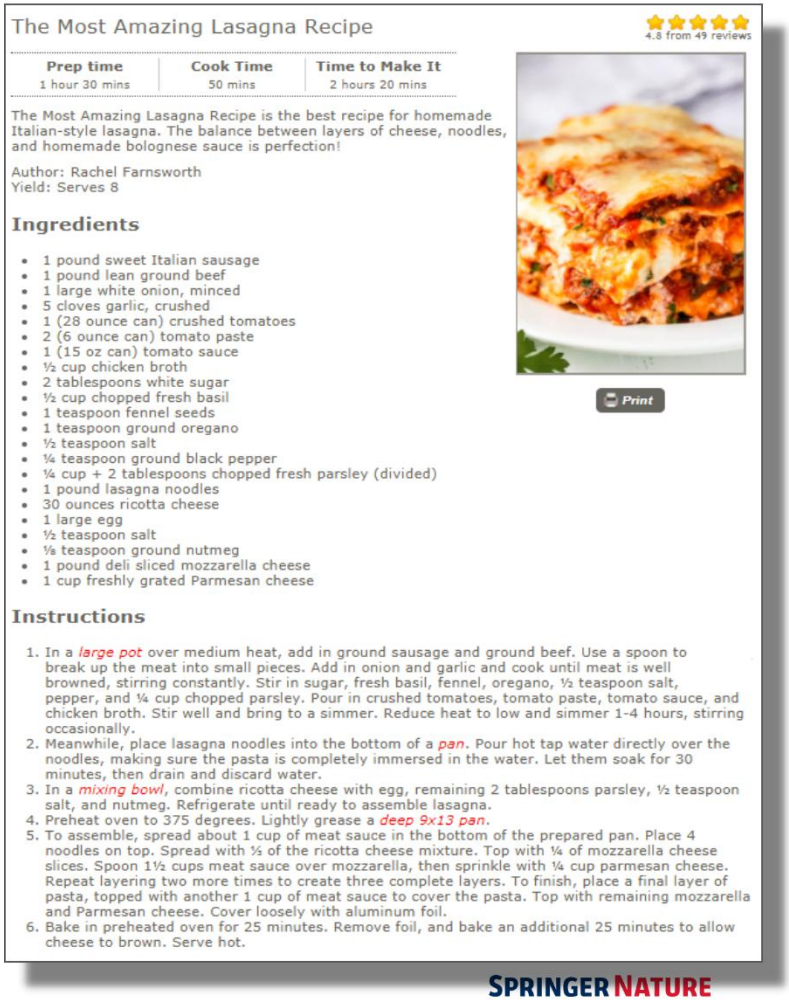
TEM, SXES, STM, etc.

生命科学领域相关研究人员需要实验室指南和方法

实验室指南可以识别、操纵和解释分子细胞组件的生物学过程、功能、结构和活性。

实验室指南的特点

- 分步说明以执行特定的实验室技术
- 科学程序的标准化以确保复制
- 包括材料、设备、注意步骤、故障排除、计算的详细列表
- 确保始终以相同的方式重复实验



The Most Amazing Lasagna Recipe

4.8 from 49 reviews

Prep time	Cook Time	Time to Make It
1 hour 30 mins	50 mins	2 hours 20 mins

The Most Amazing Lasagna Recipe is the best recipe for homemade Italian-style lasagna. The balance between layers of cheese, noodles, and homemade bolognese sauce is perfection!

Author: Rachel Farnsworth
Yield: Serves 8

Print

Ingredients

- 1 pound sweet Italian sausage
- 1 pound lean ground beef
- 1 large white onion, minced
- 5 cloves garlic, crushed
- 1 (28 ounce can) crushed tomatoes
- 2 (6 ounce can) tomato paste
- 1 (15 oz can) tomato sauce
- ½ cup chicken broth
- 2 tablespoons white sugar
- ½ cup chopped fresh basil
- 1 teaspoon fennel seeds
- 1 teaspoon ground oregano
- ½ teaspoon salt
- ¼ teaspoon ground black pepper
- ¼ cup + 2 tablespoons chopped fresh parsley (divided)
- 1 pound lasagna noodles
- 30 ounces ricotta cheese
- 1 large egg
- ½ teaspoon salt
- ⅛ teaspoon ground nutmeg
- 1 pound deli sliced mozzarella cheese
- 1 cup freshly grated Parmesan cheese

Instructions

1. In a *large pot* over medium heat, add in ground sausage and ground beef. Use a spoon to break up the meat into small pieces. Add in onion and garlic and cook until meat is well browned, stirring constantly. Stir in sugar, fresh basil, fennel, oregano, ½ teaspoon salt, pepper, and ¼ cup chopped parsley. Pour in crushed tomatoes, tomato paste, tomato sauce, and chicken broth. Stir well and bring to a simmer. Reduce heat to low and simmer 1-4 hours, stirring occasionally.
2. Meanwhile, place lasagna noodles into the bottom of a *pan*. Pour hot tap water directly over the noodles, making sure the pasta is completely immersed in the water. Let them soak for 30 minutes, then drain and discard water.
3. In a *mixing bowl*, combine ricotta cheese with egg, remaining 2 tablespoons parsley, ½ teaspoon salt, and nutmeg. Refrigerate until ready to assemble lasagna.
4. Preheat oven to 375 degrees. Lightly grease a *deep 9x13 pan*.
5. To assemble, spread about 1 cup of meat sauce in the bottom of the prepared pan. Place 4 noodles on top. Spread with ⅓ of the ricotta cheese mixture. Top with ¼ of mozzarella cheese slices. Spoon 1½ cups meat sauce over mozzarella, then sprinkle with ¼ cup parmesan cheese. Repeat layering two more times to create three complete layers. To finish, place a final layer of pasta, topped with another 1 cup of meat sauce to cover the pasta. Top with remaining mozzarella and Parmesan cheese. Cover loosely with aluminum foil.
6. Bake in preheated oven for 25 minutes. Remove foil, and bake an additional 25 minutes to allow cheese to brown. Serve hot.

SPRINGER NATURE

Springer Nature 针对重要学科方向的解决方案

3.0

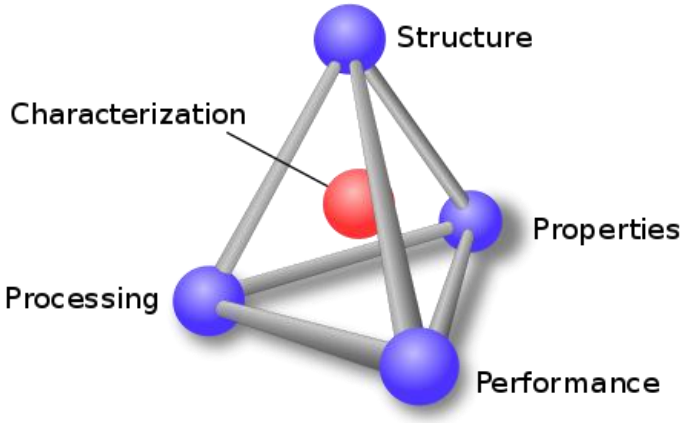
材料科学

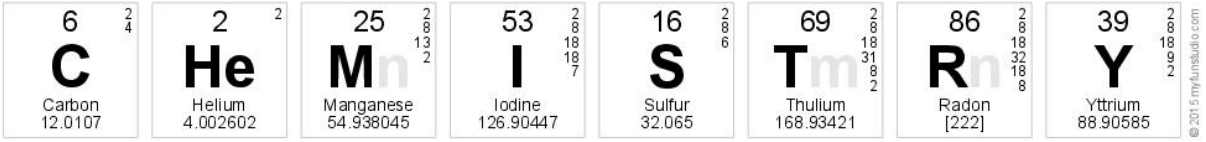
3.1

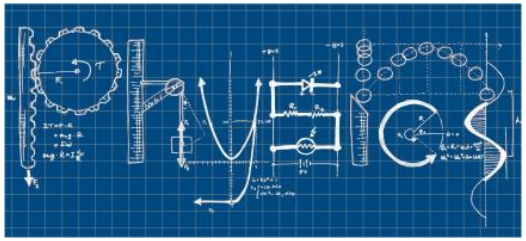
Springer Materials

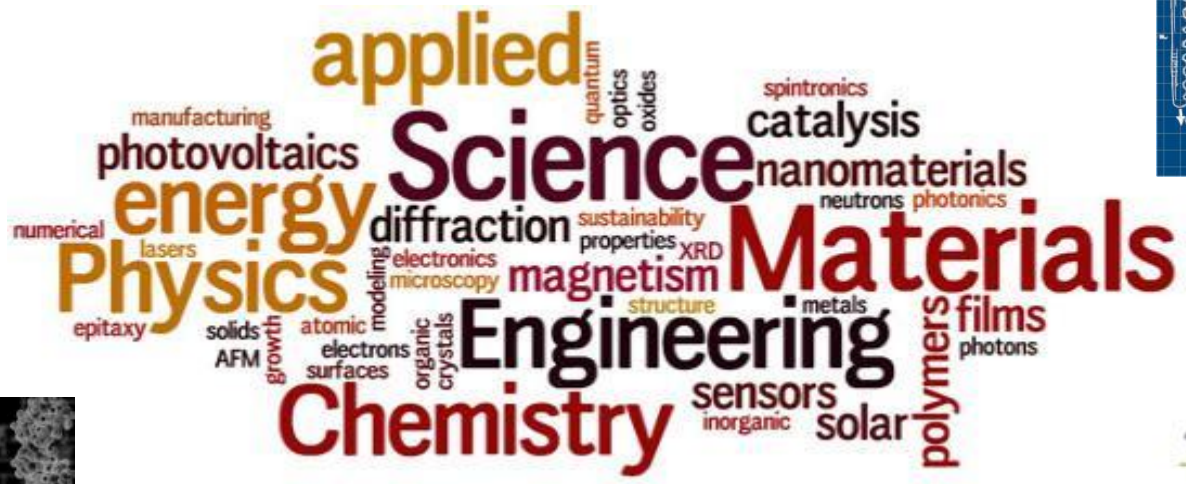
材料科学

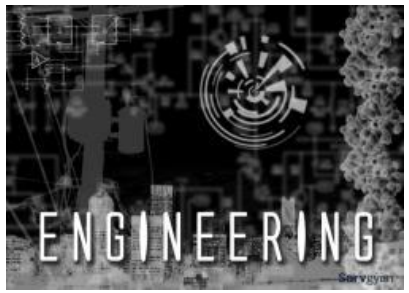
- 材料科学是一个研究材料的很大的学科[1,2]
- 查找并使用材料的结构与特性之间的关系
- 材料科学具有多学科间很强的交叉性[3]







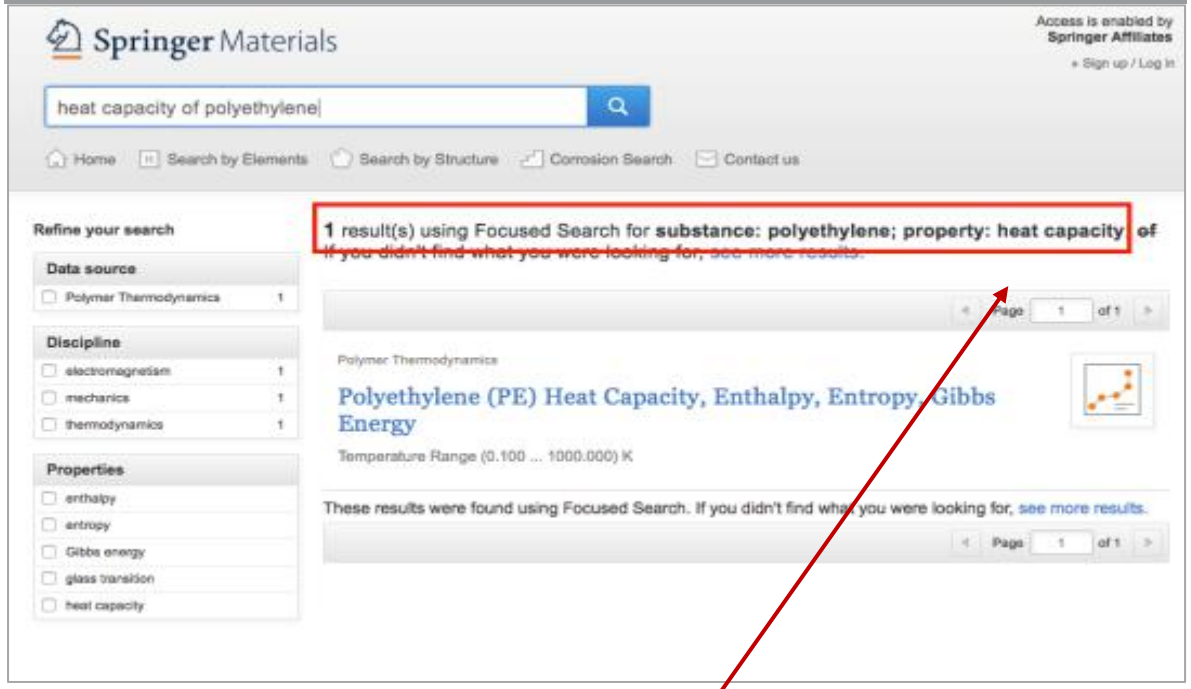




1) strangematterexhibit.com/whatis.html
2) en.wikipedia.org/wiki/Materials_science
3) rit.edu/cos/cmse/

SPRINGERMATERIALS运用值得信赖的资源为您节省时间

materials.springer.com



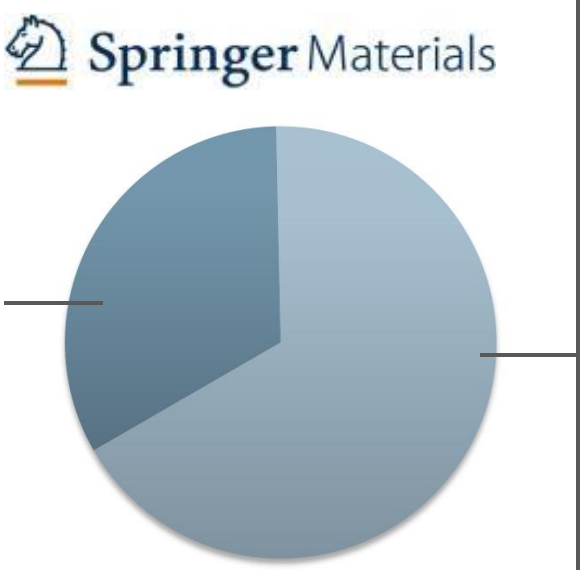
1 个结果

直接链接到主要研究成果的可交互使用的图表

SpringerMaterials 是世界上最大的材料科学数据库之一，可在一个平台上**快速**提供包含290,000**多种材料**和3,000个**性质**的可**信赖**的**精选**内容。

借助整合的多源平台：含有多个子数据库

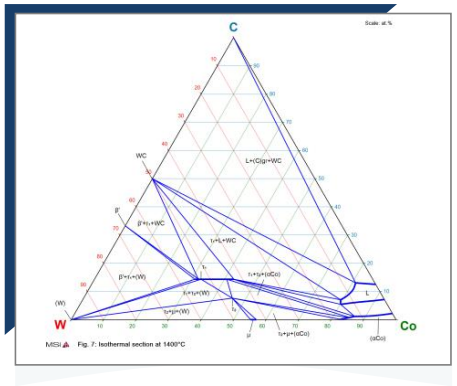
Landolt Börnstein

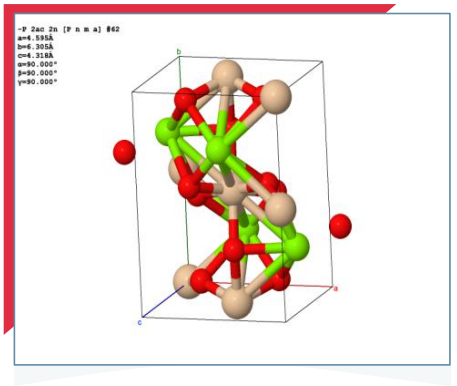


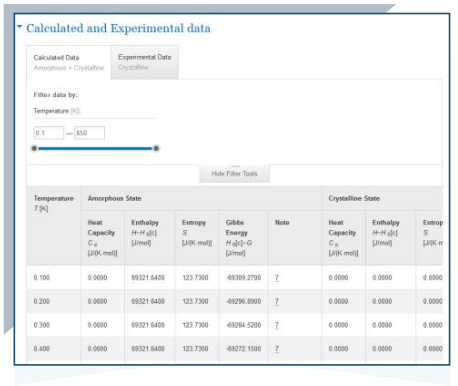
- Linus Pauling Files – Inorganic Solid Phases
- Thermophysical Properties (aka Dortmund Data Bank Technology)
- Adsorption Isotherm Database
- Polymer Thermodynamics Database (ATHAS)
- NIST Corrosion Database
- MSI Eureka
- Dortmund Databank of Separation Technology
- SpringerMaterials Interactive
- SpringerMaterials Fundamentals Handbooks
- Substance Profiles
- NMR data collection
- Springer Handbooks (e.g., VDI Heat Atlas)

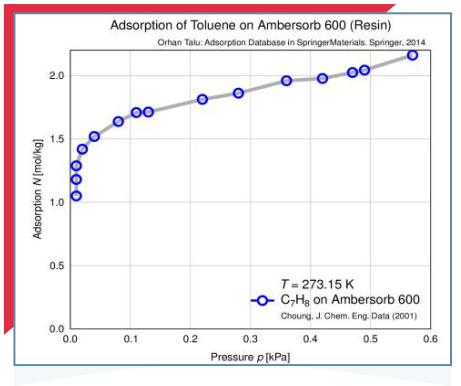
SpringerMaterials内容概览

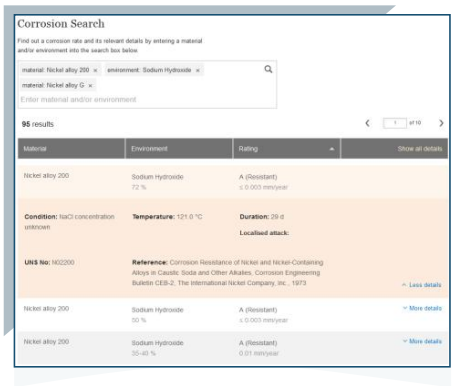
数据类型： *相图、晶体结构、数据表格、材料性质档案 、曲线图等等。*

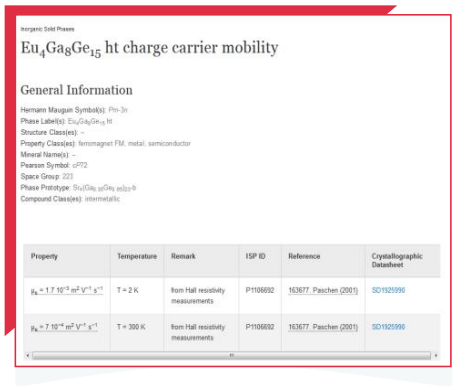


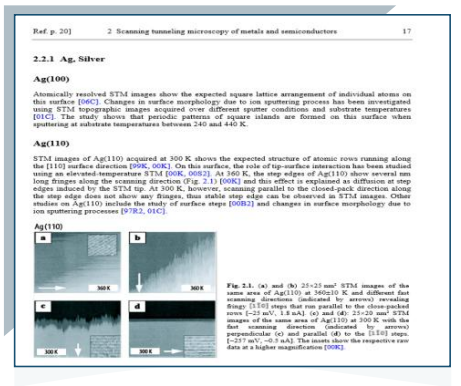












数据库内容按季度更新

290,000+ 种材料, 3000+ 中性能, 600,000+ 个词条 并持续增长

主要材料类型与性质分类包括


物理


化学


热力学


电磁学


结构

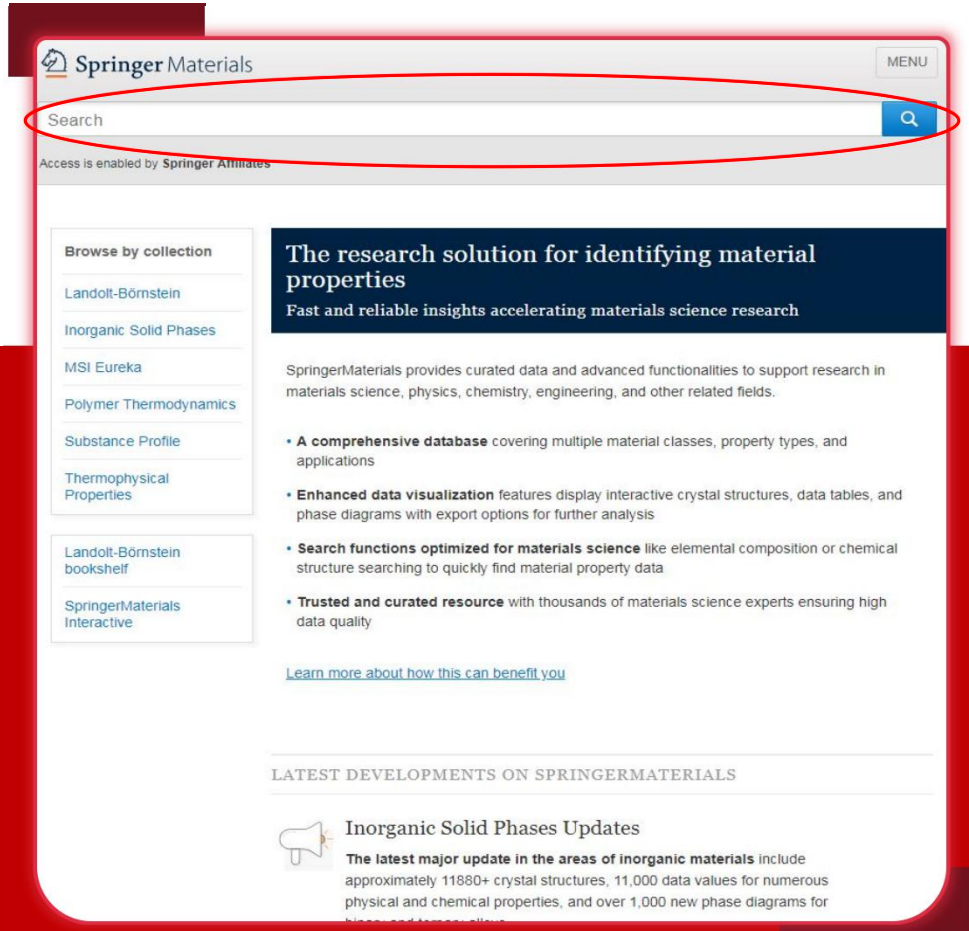

机械

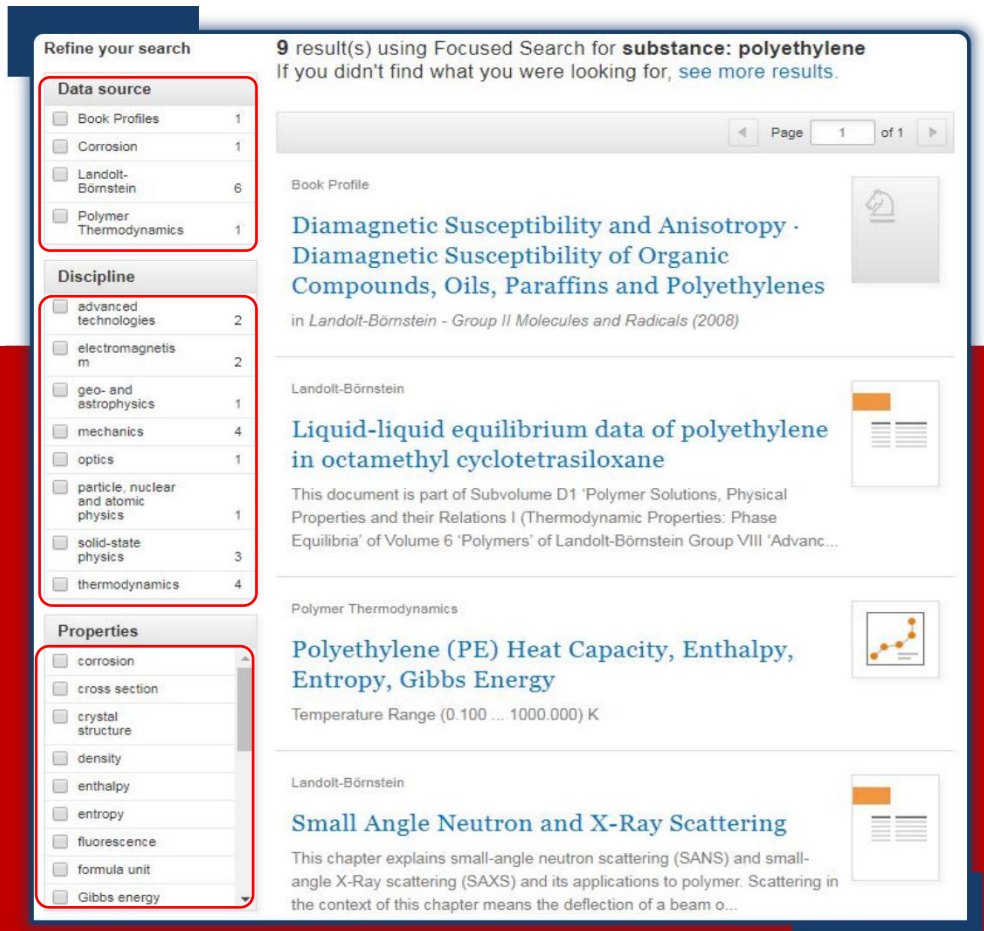

光谱学


原子能

SPRINGERMATERIALS 切中实质

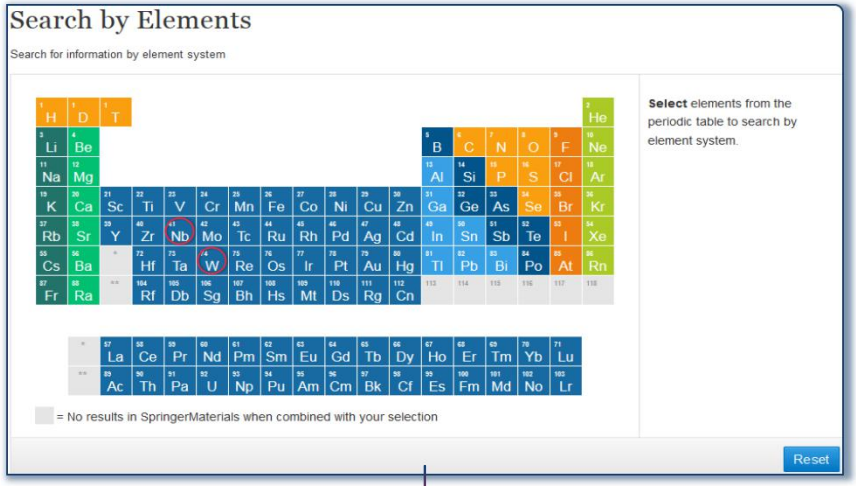
文本搜索及筛选

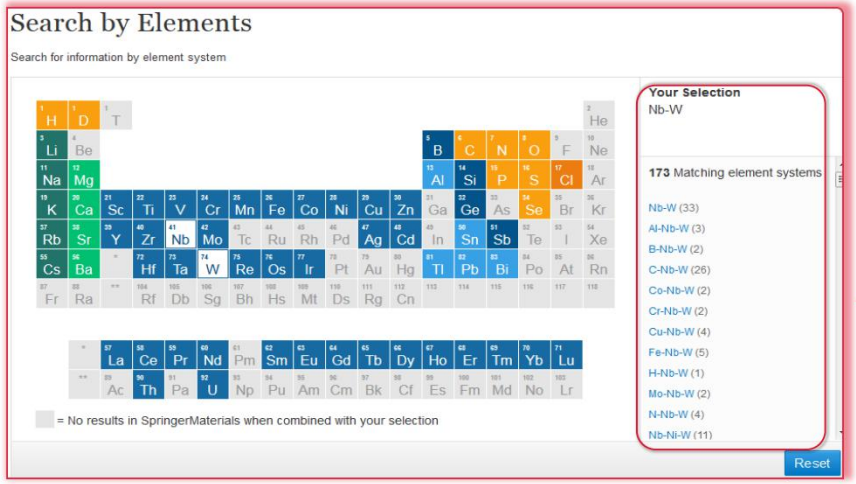


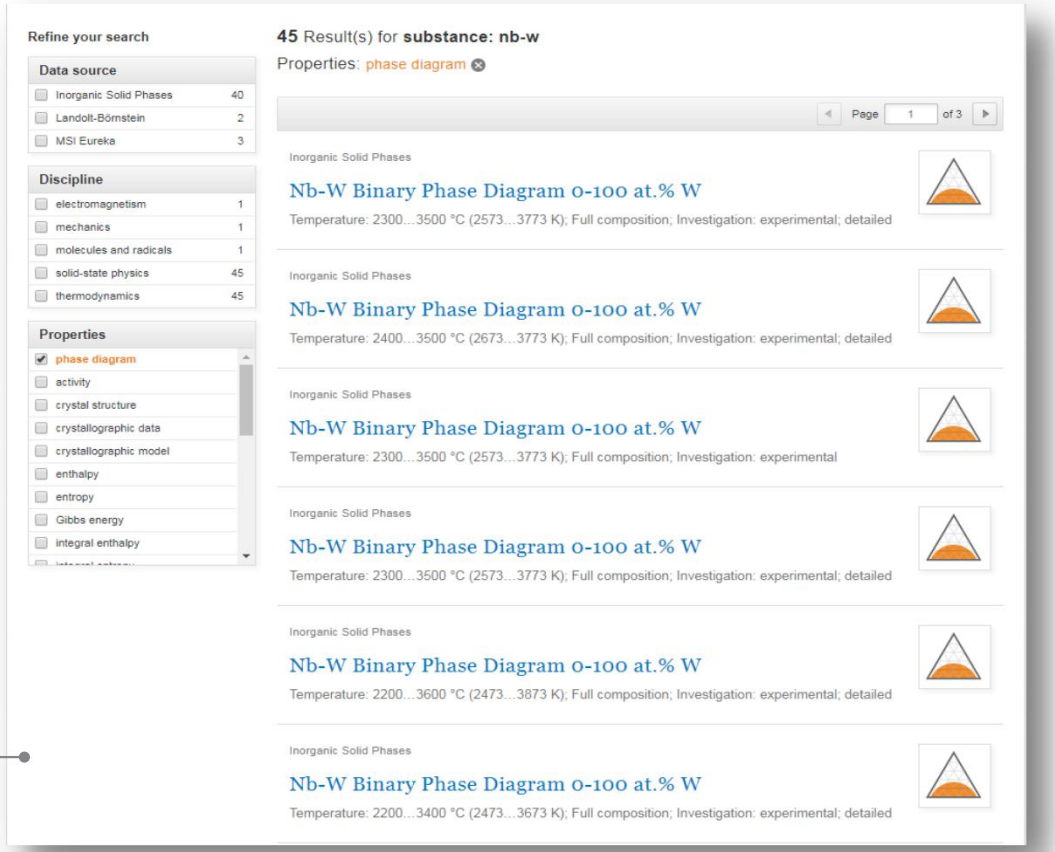


多种搜索方式

元素周期表搜索

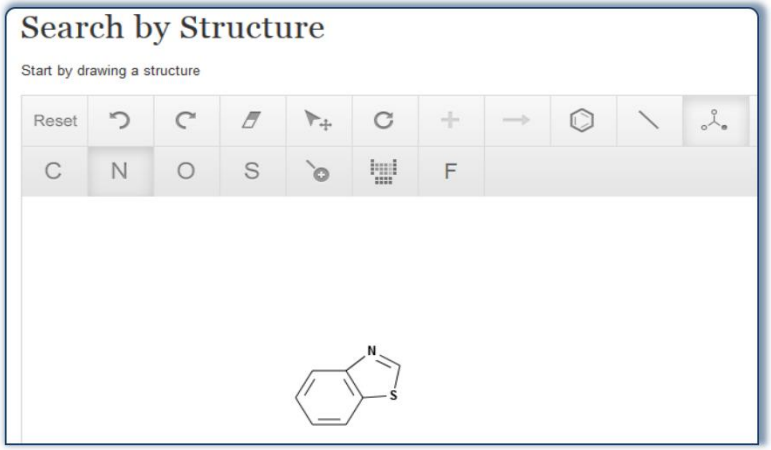


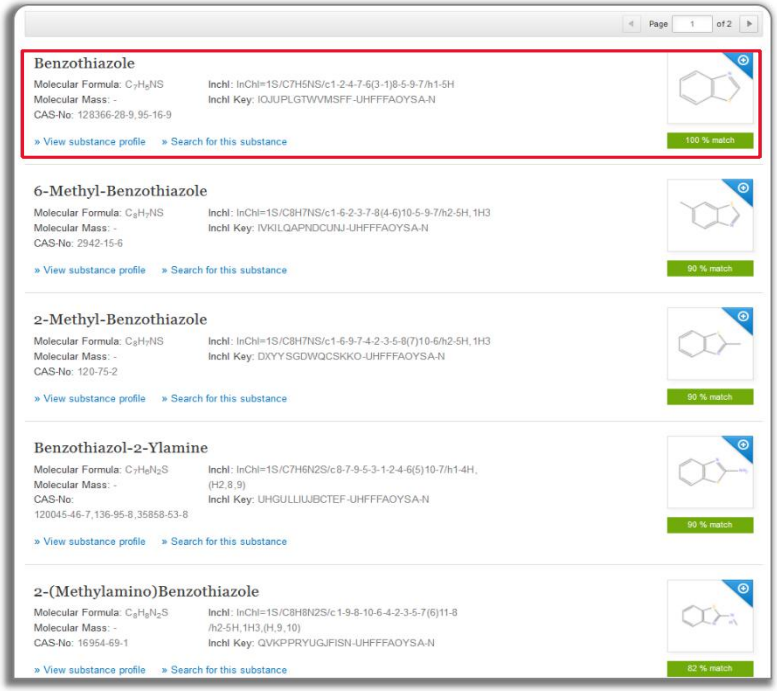


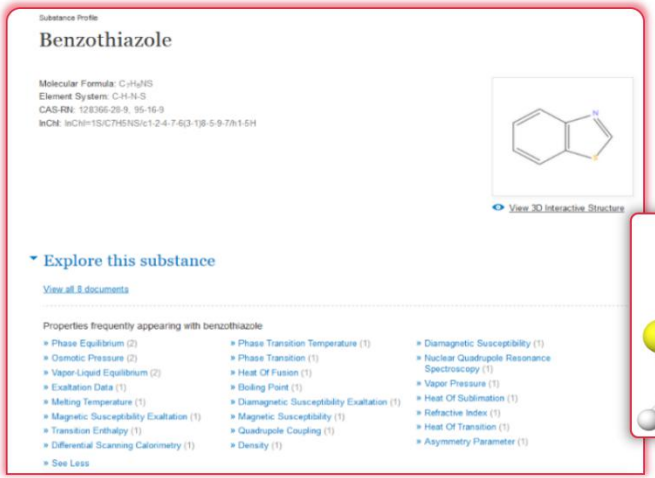


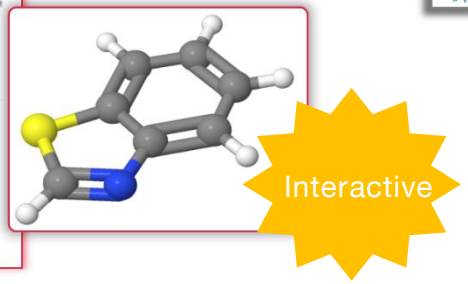
多种搜索方式

化学结构输入









多种搜索方式

腐蚀数据专业搜索

Corrosion Search

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

environment: Seawater × material: 301 stainless steel × material: 2Ni steel ×

Enter material and/or environment

7 results

1 of 1

Material	Environment	Rating	Show all details
301 stainless steel	Seawater	A (Resistant) ≤ 0.125 mm/year	
2Ni steel	Seawater	A (Resistant) 0.084 mm/year	
2Ni steel	Seawater	A (Resistant) 0.1 mm/year	
2Ni steel	Seawater	B (Good) 0.19 mm/year	
301 stainless steel	Seawater	C (Questionable) 0.5 - 1.25 mm/year	
2Ni steel	Seawater	Localized	
2Ni steel	Seawater	Localized	

Download this table (CSV format, UTF-8 encoded)

Corrosion Search

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

material: Niobium ×

Enter material and/or environment

157 results

2 of 16

Material	Environment	Rating	Show all details
Niobium	Sulfuric Acid 98 %	A (Resistant) 5.0E-4 mm/year	
Condition:	**Temperature:** 19.0 °C - 26.0 °C	**Duration:** 36 d **Localised attack:**	
UNS No: R04210	**Reference:** Metals Handbook, Ninth Edition, Vol 13, Corrosion, ASM International, Metals Park, OH, 1987, p 730		Less details
Niobium	Sulfuric Acid 72 %	A (Resistant) 0.1 mm/year	More details
Niobium	Sulfuric Acid 72 %	A (Resistant) 0.03 mm/year	More details
Niobium	Sulfuric Acid 50 %	A (Resistant) ≤ 0.125 mm/year	More details
Niobium	Sulfuric Acid 50 %	A (Resistant) ≤ 0.125 mm/year	More details

Search & Sort by Material(s) & Environment(s)

SPRINGER NATURE

生命科学相关学科

3.2

SPRINGER NATURE
Experiments

生命科学相关领域研究人员面临的三大挑战

1. 实验结果的可重复性
2. 难以找到相关协议和方法的内容
3. 有关实验室技术和应用的信息分散

宝贵的研究时间和金钱的浪费

寻找合适的实验室指南和方法效率很低

Google Scholar

PubMed

Library Website

Other Publishers

Google

Springer Link

nature.com

用户访问

访问渠道

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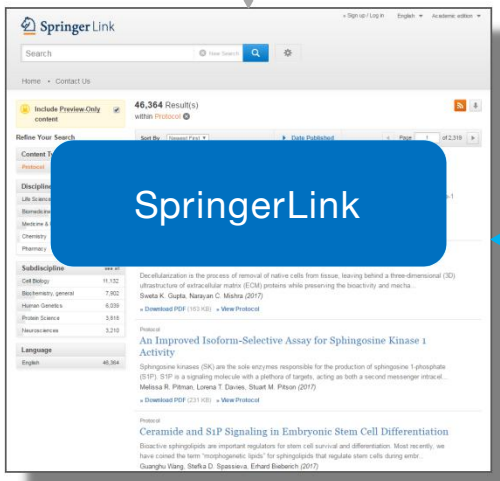

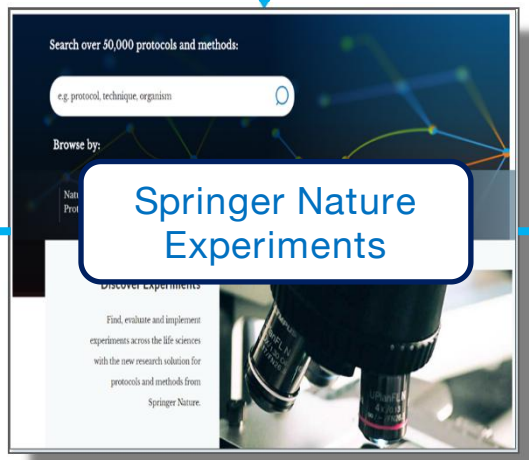

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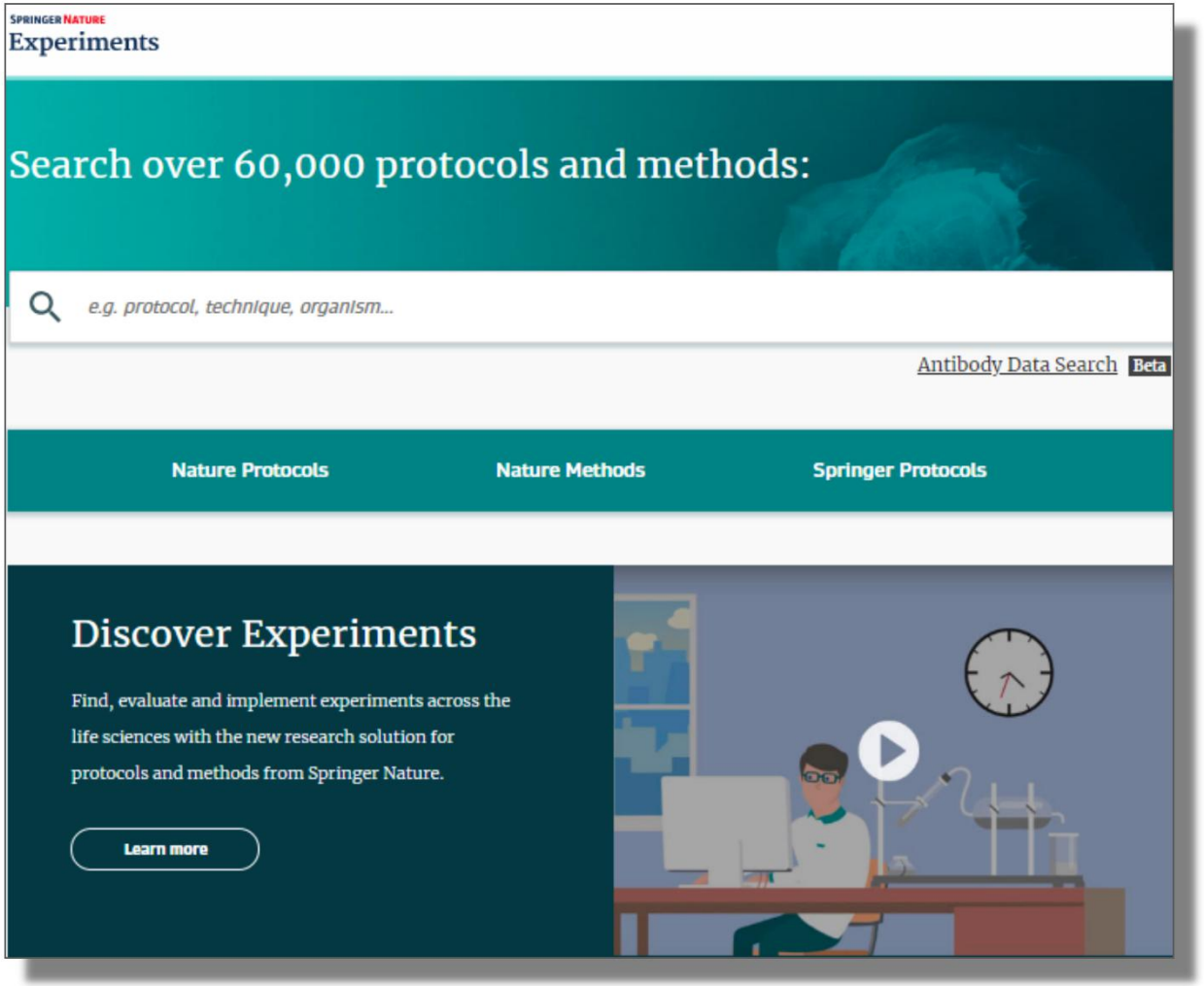

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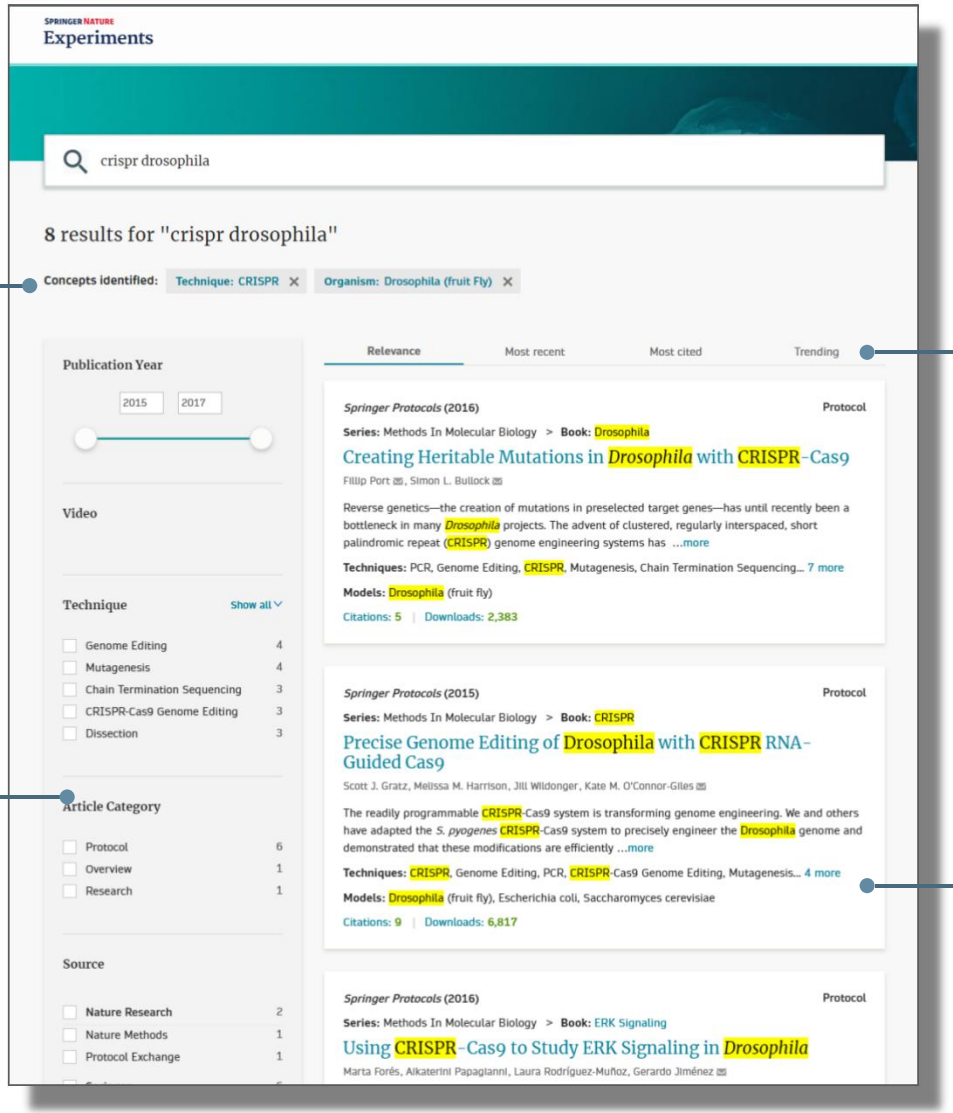

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