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Claudia 許佳儒

claudia.syu@igrouptaiwan.com

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A DIVISION OF THE AMERICAN CHEMICAL SOCIETY

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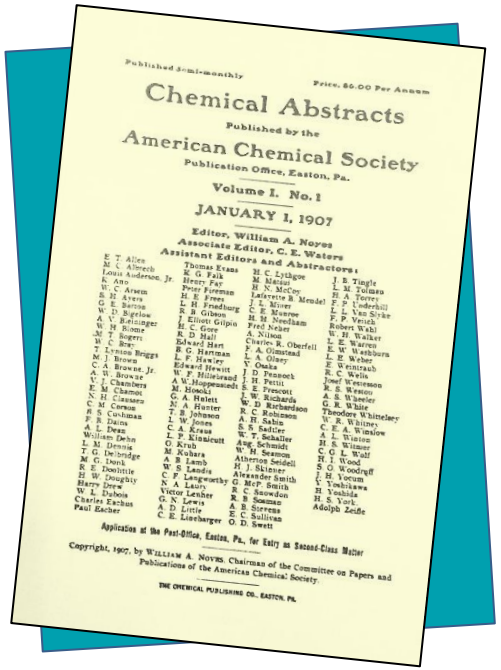

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Chemical Abstracts

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JANUARY 1, 1907

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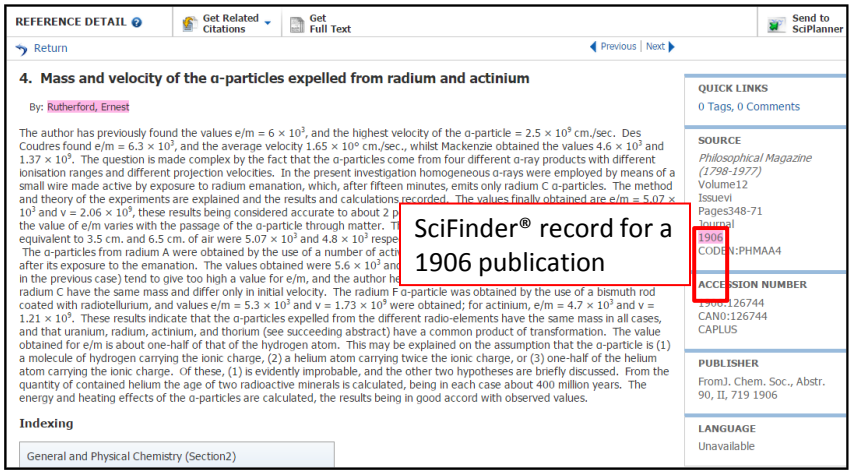

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4. Mass and velocity of the α-particles expelled from radium and actinium

By: Rutherford, Ernest

The author has previously found the values e/m = 6 × 10³, and the highest velocity of the α-particle = 2.5 × 10⁹ cm./sec. Des Coudres found e/m = 6.3 × 10³, and the average velocity 1.65 × 10⁹ cm./sec., whilst Mackenzie obtained the values 4.6 × 10³ and 1.37 × 10⁹. The question is made complex by the fact that the α-particles come from four different α-ray products with different ionisation ranges and different projection velocities. In the present investigation homogeneous α-rays were employed by means of a small wire made active by exposure to radium emanation, which, after fifteen minutes, emits only radium C α-particles. The method and theory of the experiments are explained and the results and calculations recorded. The values finally obtained are e/m = 5.07 × 10³ and v = 2.06 × 10⁹, these results being considered accurate to about 2 p
equivalent to 3.5 cm. and 6.5 cm. of air were 5.07 × 10³ and 4.8 × 10³ respe
The α-particles from radium A were obtained by the use of a number of acth
after its exposure to the emanation. The values obtained were 5.6 × 10³ and
in the previous case) tend to give too high a value for e/m, and the author h
radium C have the same mass and differ only in initial velocity. The radium F α-particle was obtained by the use of a bismuth rod coated with radiotellurium, and values e/m = 5.3 × 10³ and v = 1.73 × 10⁹ were obtained; for actinium, e/m = 4.7 × 10³ and v = 1.21 × 10⁹. These results indicate that the α-particles expelled from the different radio-elements have the same mass in all cases, and that uranium, radium, actinium, and thorium (see succeeding abstract) have a common product of transformation. The value obtained for e/m is about one-half of that of the hydrogen atom. This may be explained on the assumption that the α-particle is (1) a molecule of hydrogen carrying the ionic charge, (2) a helium atom carrying twice the ionic charge, or (3) one-half of the helium atom carrying the ionic charge. Of these, (1) is evidently improbable, and the other two hypotheses are briefly discussed. From the quantity of contained helium the age of two radioactive minerals is calculated, being in each case about 400 million years. The energy and heating effects of the α-particles are calculated, the results being in good accord with observed values.

Indexing

General and Physical Chemistry (Section2)

QUICK LINKS
0 Tags, 0 Comments

SOURCE
Philosophical Magazine (1798-1977)
Volume12
Issuevi
Pages348-71
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CODEN:PHMAA4

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CAN0:126744
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FromJ. Chem. Soc., Abstr. 90, II, 719 1906

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Unavailable

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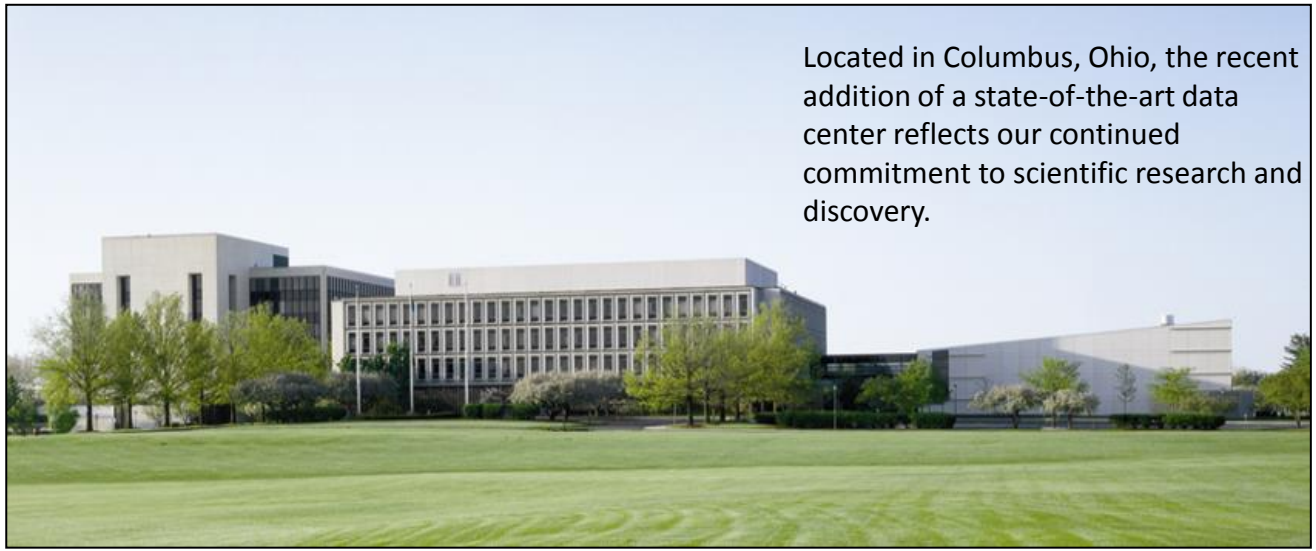

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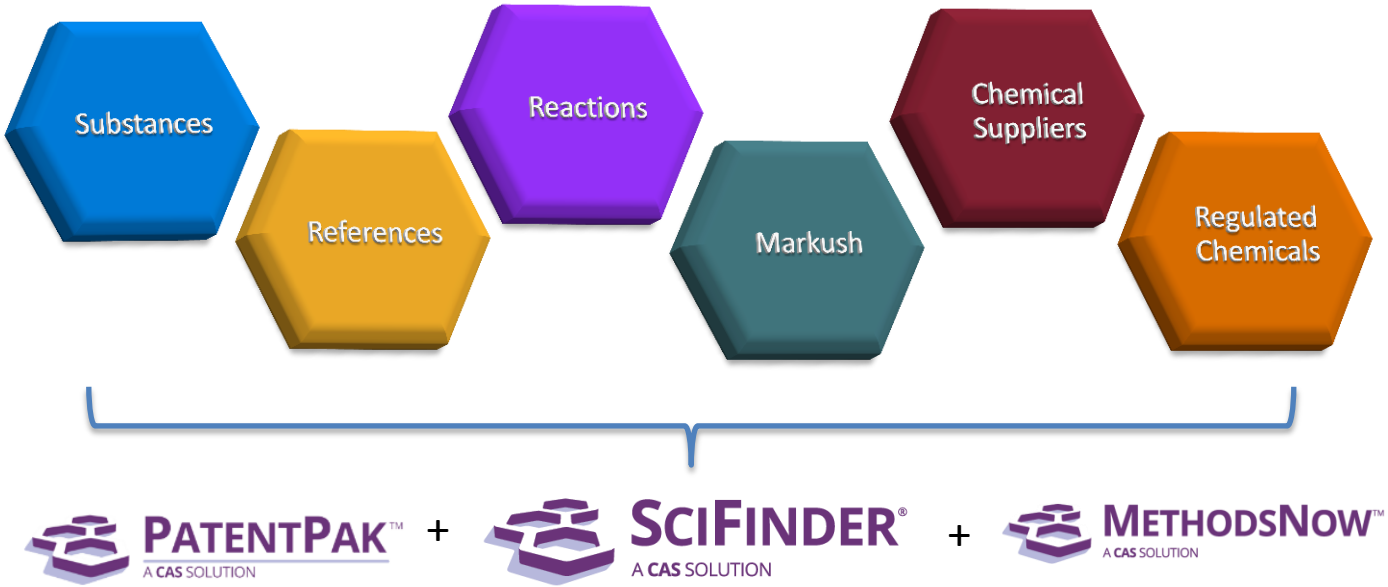

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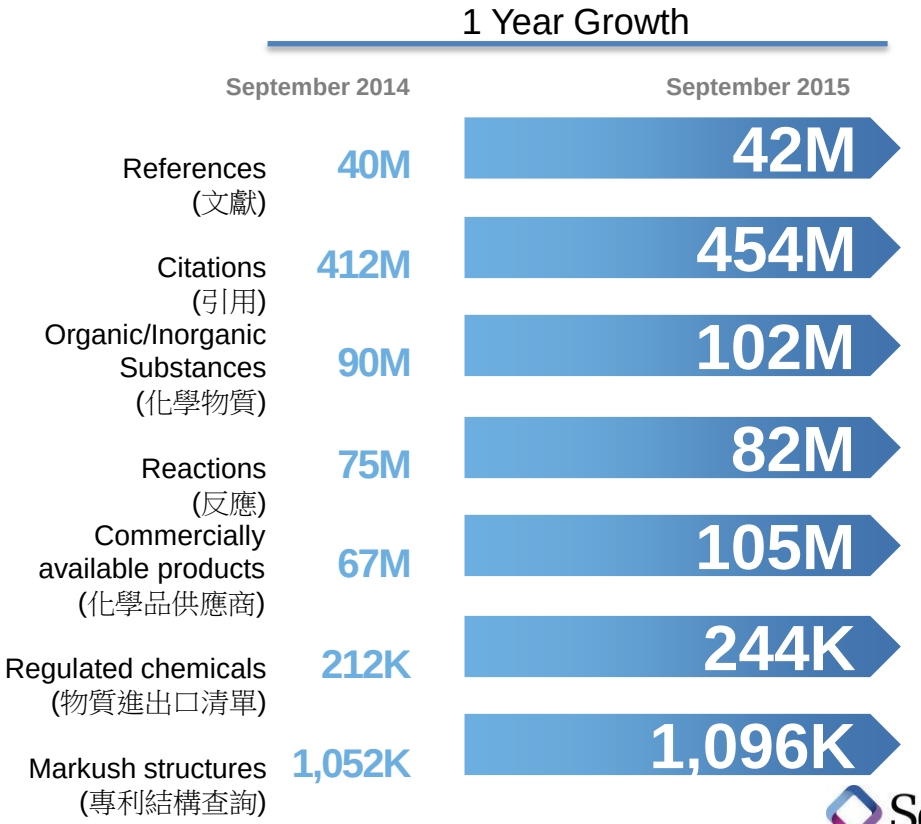

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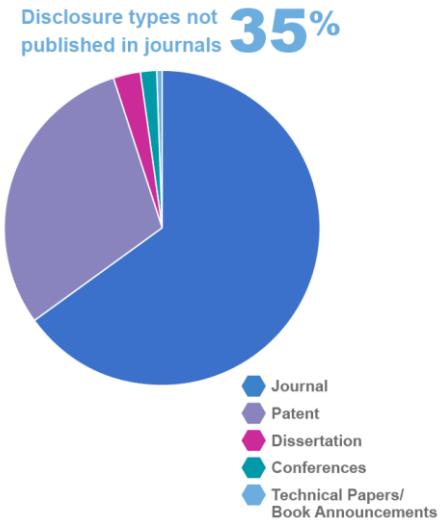

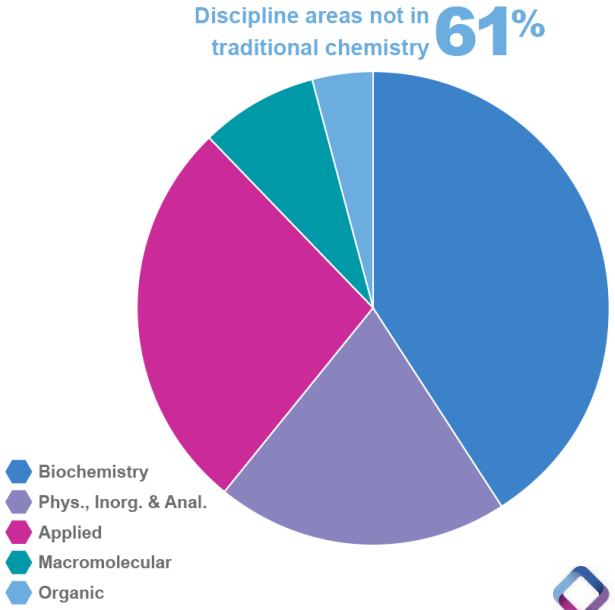

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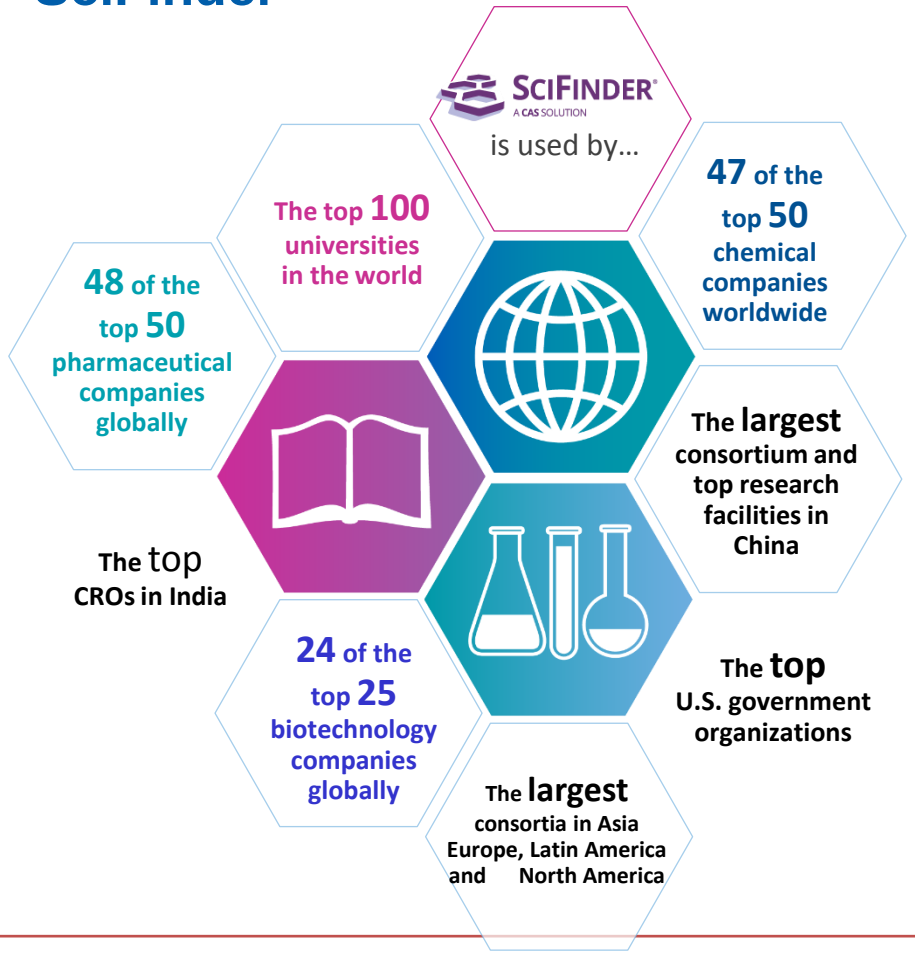

Sources:

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- *Chemical & Engineering News*
- *Genetic Engineering & Biotechnology News*
- *PharmaExec.com*

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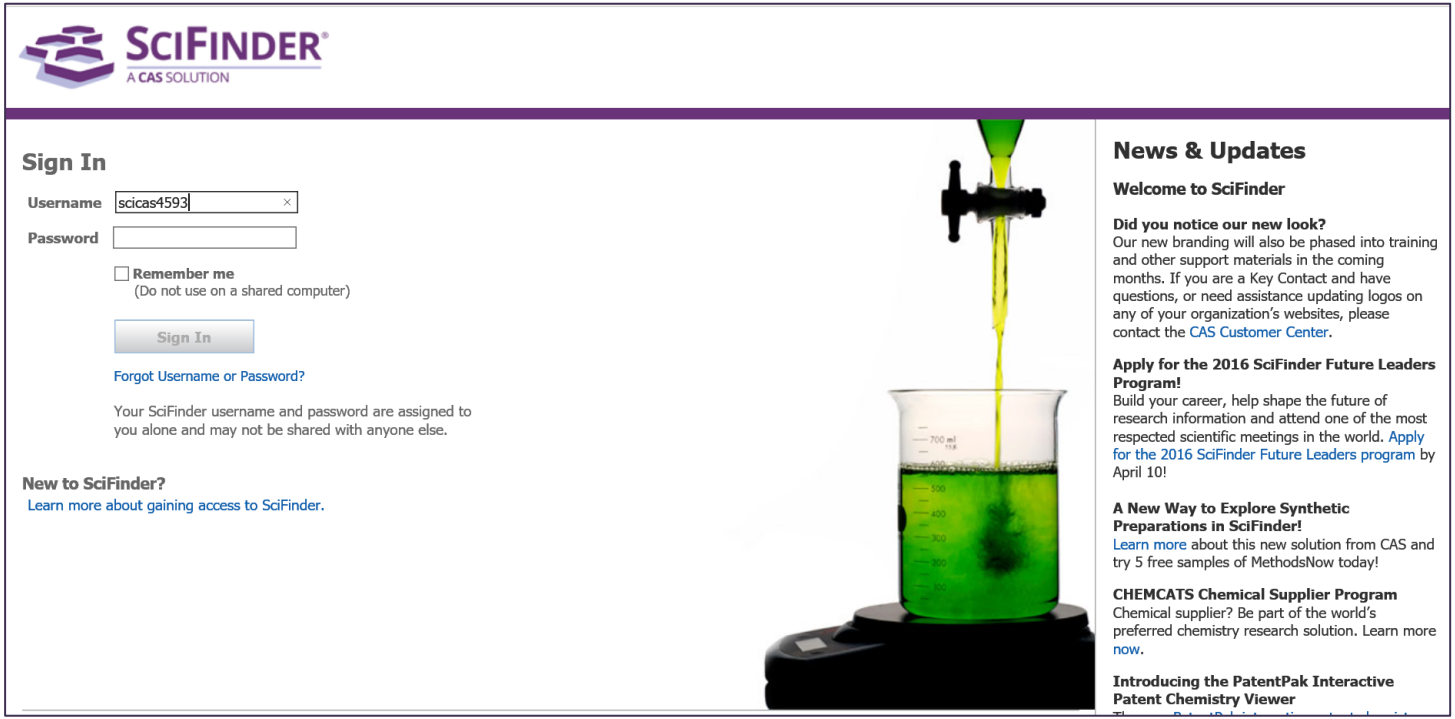

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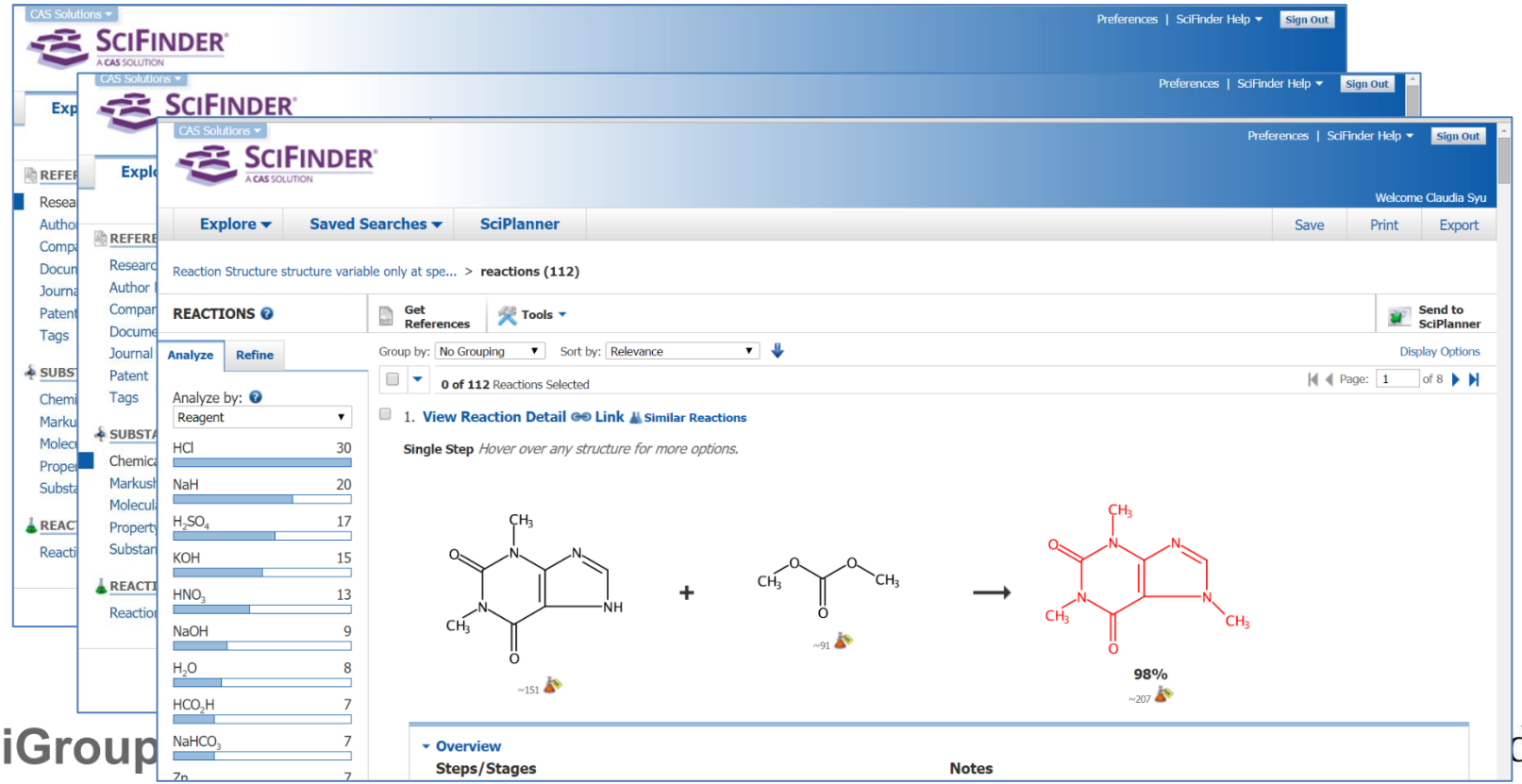

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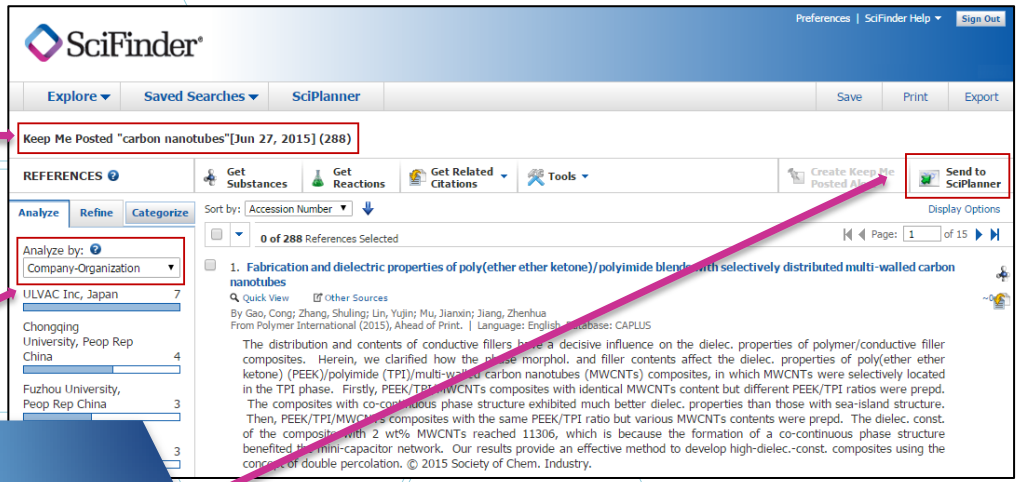
Stay current in your field and keep track of competition

Quickly find and analyze information (research topic, structure, reaction)

Share ideas with colleagues and collaborators



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詳細的合成資訊完整的實驗步驟，以及化合物完整光譜資訊，一併條列式的呈現。
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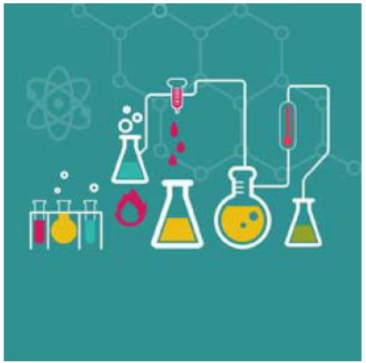

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如何使用?

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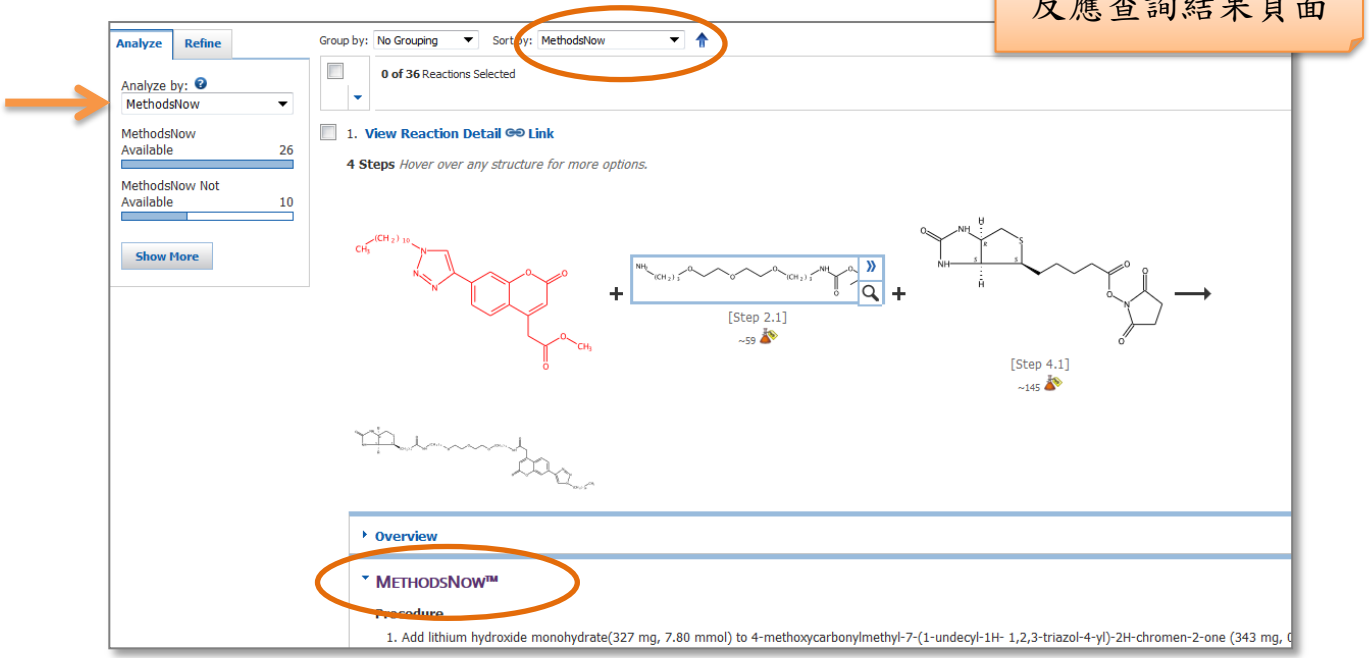

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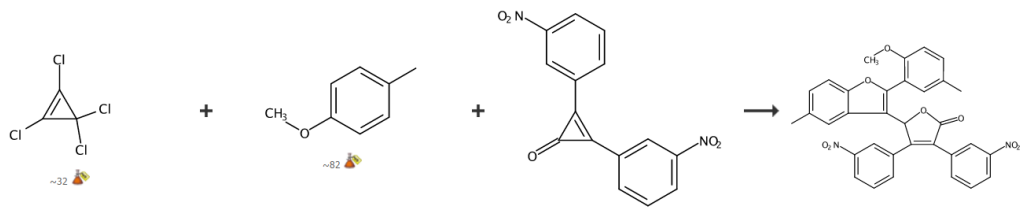
15. View Reaction Detail Link

3 Steps *Hover over any structure for more options.*



[Step 2.1]

Overview

Steps/Stages

1.1 R:$AlCl_3$, S:CH_2Cl_2, 5 min, -20°C; 10 min, -20°C
1.2 5 min, -20°C; -20°C → rt; 45 min, rt
1.3 R:NH_4Cl, S:H_2O
2.1 C:CuBr, S:$ClCH_2CH_2Cl$, 12 h, 75°C
3.1 R:BBr_3, S:CH_2Cl_2, 20 min, 0°C; 3 h, rt
3.2 R:H_2O

Notes

Reactants: 3, Reagents: 4, Catalysts: 1, Solvents: 3, Steps: 3, Stages: 6, Most stages in any one step: 3

References

Synthesis of benzofuran-containing spirolactones from diarylcyclopropenones
Quick View Other Sources
By Syu, Jia-Ru et al
From Tetrahedron Letters, 55(6), 1207-1211; 2014

METHODSNOW™

Procedure

1. Charge a flame dried, argon-fed three neck flask fitted with a reflux condenser with $AlCl_3$ (1024 mg, 7.8 mmol) and dry methylene chloride (50 mL).
2. Cool the flask to -20 °C.

View more...

Available Experimental Data

^1H NMR, ^{13}C NMR, IR, HRMS, MP, R_f, State

View with MethodsNow

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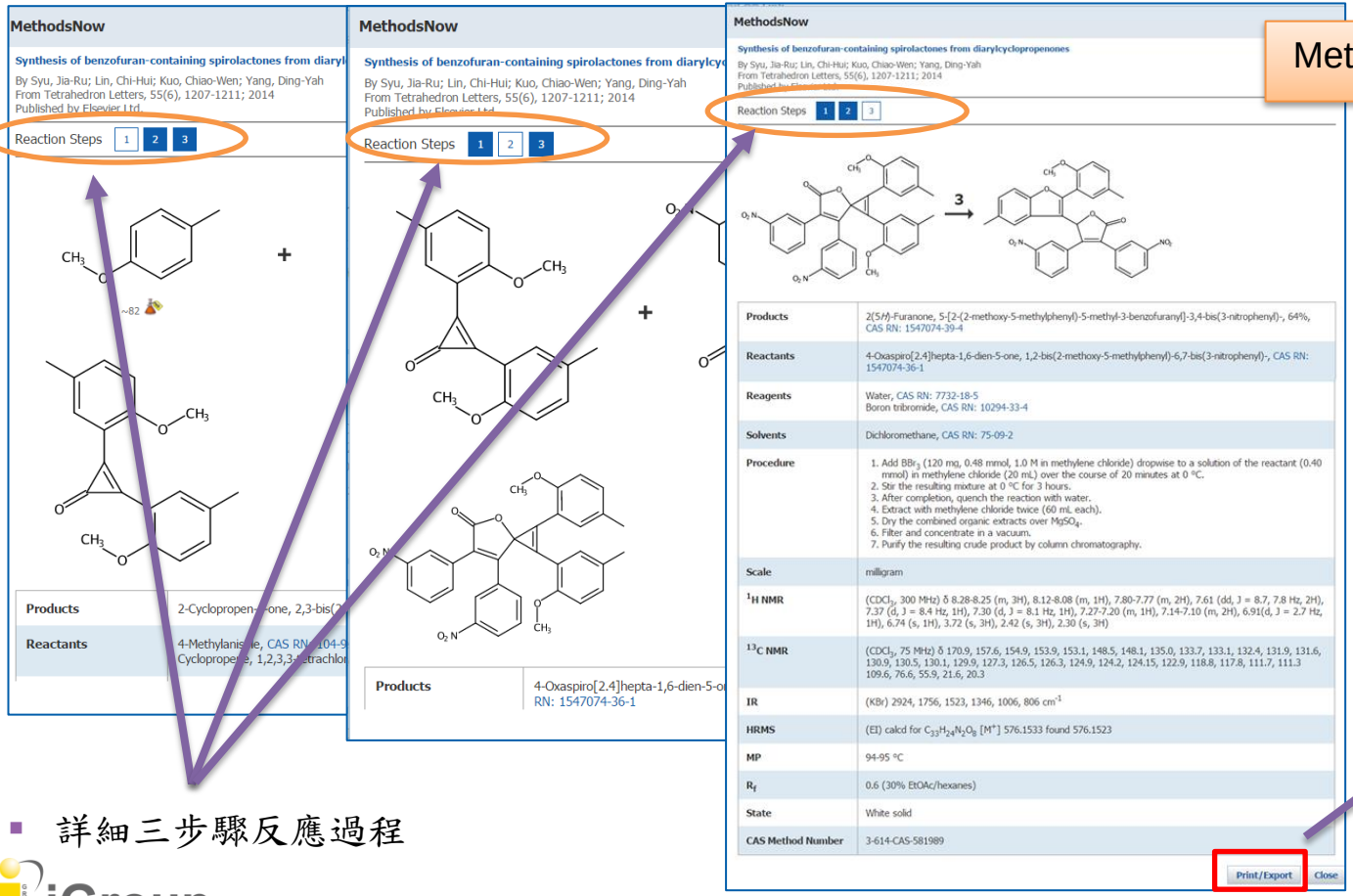
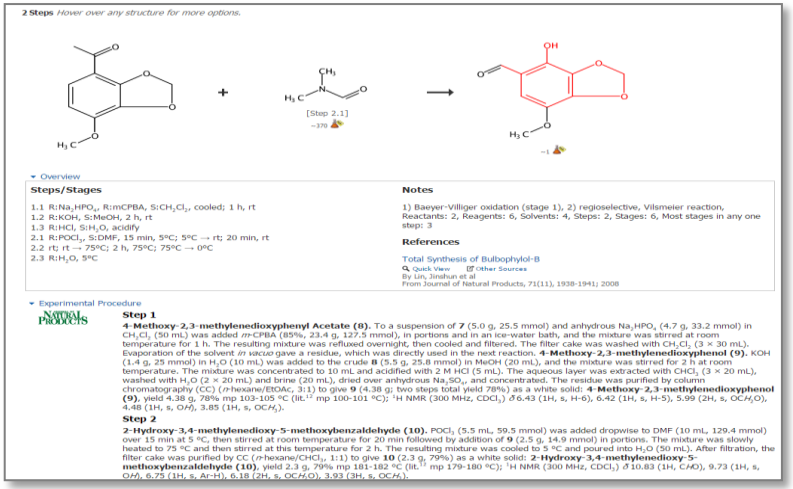
MethodsNow 畫面



- 詳細三步驟反應過程
- 匯出功能

Experimental procedures VS MethodsNow



2 Steps *Hover over any structure for more options.*

▾ Overview

Steps/Stages

1.1 R:Na_2HPO_4, R:mCPBA, S:CH_2Cl_2, cooled; 1 h, rt
1.2 R:KOH, S:MeOH, 2 h, rt
1.3 R:HCl, S:H_2O, acidify
2.1 R:$POCl_3$, S:DMF, 15 min, 5°C; 5°C → rt; 20 min, rt
2.2 rt; rt → 75°C; 2 h, 75°C; 75°C → 0°C
2.3 R:H_2O, 5°C

Notes

1) Baeyer-Villiger oxidation (stage 1), 2) regioselective, Vilsmeier reaction, Reactants: 2, Reagents: 6, Solvents: 4, Steps: 2, Stages: 6, Most stages in any one step: 3

References

Total Synthesis of Bulbophylol-B
Quick View Other Sources
By Lin, Jinshun et al
From Journal of Natural Products, 71(11), 1938-1941; 2008

▾ Experimental Procedure

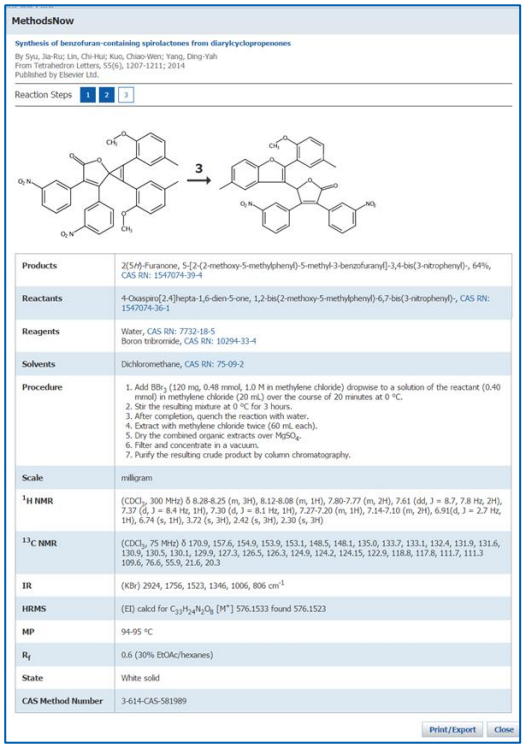
NATURAL PRODUCTS

Step 1

4-Methoxy-2,3-methylenedioxyphenyl Acetate (8). To a suspension of **7** (5.0 g, 25.5 mmol) and anhydrous Na_2HPO_4 (4.7 g, 33.2 mmol) in CH_2Cl_2 (50 mL) was added *m*-CPBA (85%, 23.4 g, 127.5 mmol), in portions and in an ice-water bath, and the mixture was stirred at room temperature for 1 h. The resulting mixture was refluxed overnight, then cooled and filtered. The filter cake was washed with CH_2Cl_2 (3 × 30 mL). Evaporation of the solvent *in vacuo* gave a residue, which was directly used in the next reaction. **4-Methoxy-2,3-methylenedioxyphenol (9).** KOH (1.4 g, 25 mmol) in H_2O (10 mL) was added to the crude **8** (5.5 g, 25.8 mmol) in MeOH (20 mL), and the mixture was stirred for 2 h at room temperature. The mixture was concentrated to 10 mL and acidified with 2 M HCl (5 mL). The aqueous layer was extracted with $CHCl_3$ (3 × 20 mL), washed with H_2O (2 × 20 mL) and brine (20 mL), dried over anhydrous Na_2SO_4, and concentrated. The residue was purified by column chromatography (CC) (*n*-hexane/EtOAc, 3:1) to give **9** (4.38 g; two steps total yield 78%) as a white solid: **4-Methoxy-2,3-methylenedioxyphenol (9)**, yield 4.38 g, 78% mp 103-105 °C (lit.[12] mp 100-101 °C); ^{1}H NMR (300 MHz, $CDCl_3$) δ 6.43 (1H, s, H-6), 6.42 (1H, s, H-5), 5.99 (2H, s, OCH_2O), 4.48 (1H, s, OH), 3.85 (1H, s, OCH_3).

Step 2

2-Hydroxy-3,4-methylenedioxy-5-methoxybenzaldehyde (10). $POCl_3$ (5.5 mL, 59.5 mmol) was added dropwise to DMF (10 mL, 129.4 mmol) over 15 min at 5 °C, then stirred at room temperature for 20 min followed by addition of **9** (2.5 g, 14.9 mmol) in portions. The mixture was slowly heated to 75 °C and then stirred at this temperature for 2 h. The resulting mixture was cooled to 5 °C and poured into H_2O (50 mL). After filtration, the filter cake was purified by CC (*n*-hexane/$CHCl_3$, 1:1) to give **10** (2.3 g, 79%) as a white solid: **2-Hydroxy-3,4-methylenedioxy-5-methoxybenzaldehyde (10)**, yield 2.3 g, 79% mp 181-182 °C (lit.[12] mp 179-180 °C); ^{1}H NMR (300 MHz, $CDCl_3$) δ 10.83 (1H, CHO), 9.73 (1H, s, OH), 6.75 (1H, s, Ar-H), 6.18 (2H, s, OCH_2O), 3.93 (3H, s, OCH_3).



MethodsNow

Synthesis of benzofuran-containing spirolactones from diarylcyclopropenones

By Syu, Jia-Ru; Lin, Chi-Hui; Kuo, Chiao-Wen; Yang, Ding-Yah
From Tetrahedron Letters, 55(6), 1207-1211; 2014
Published by Elsevier Ltd.

Reaction Steps 1 2 3

Products	2(5*H*)-Furanone, 5-[2-(2-methoxy-5-methylphenyl)-5-methyl-3-benzofuranyl]-3,4-bis(3-nitrophenyl)-, 64%, CAS RN: 1547074-39-4
Reactants	4-Oxaspiro[2.4]hepta-1,6-dien-5-one, 1,2-bis(2-methoxy-5-methylphenyl)-6,7-bis(3-nitrophenyl)-, CAS RN: 1547074-36-1
Reagents	Water, CAS RN: 7732-18-5 Boron tribromide, CAS RN: 10294-33-4
Solvents	Dichloromethane, CAS RN: 75-09-2
Procedure	1. Add BBr_3 (120 mg, 0.48 mmol, 1.0 M in methylene chloride) dropwise to a solution of the reactant (0.40 mmol) in methylene chloride (20 mL) over the course of 20 minutes at 0 °C. 2. Stir the resulting mixture at 0 °C for 3 hours. 3. After completion, quench the reaction with water. 4. Extract with methylene chloride twice (60 mL each). 5. Dry the combined organic extracts over $MgSO_4$. 6. Filter and concentrate in a vacuum. 7. Purify the resulting crude product by column chromatography.
Scale	milligram
^{1}H NMR	($CDCl_3$, 300 MHz) δ 8.28-8.25 (m, 3H), 8.12-8.08 (m, 1H), 7.80-7.77 (m, 2H), 7.61 (dd, J = 8.7, 7.8 Hz, 2H), 7.37 (d, J = 8.4 Hz, 1H), 7.30 (d, J = 8.1 Hz, 1H), 7.27-7.20 (m, 1H), 7.14-7.10 (m, 2H), 6.91(d, J = 2.7 Hz, 1H), 6.74 (s, 1H), 3.72 (s, 3H), 2.42 (s, 3H), 2.30 (s, 3H)
^{13}C NMR	($CDCl_3$, 75 MHz) δ 170.9, 157.6, 154.9, 153.9, 153.1, 148.5, 148.1, 135.0, 133.7, 133.1, 132.4, 131.9, 131.6, 130.9, 130.5, 130.1, 129.9, 127.3, 126.5, 126.3, 124.9, 124.2, 124.15, 122.9, 118.8, 117.8, 111.7, 111.3 109.6, 76.6, 55.9, 21.6, 20.3
IR	(KBr) 2924, 1756, 1523, 1346, 1006, 806 cm^{-1}
HRMS	(EI) calcd for $C_{33}H_{24}N_2O_8$ [M^+] 576.1533 found 576.1523
MP	94-95 °C
R_f	0.6 (30% EtOAc/hexanes)
State	White solid
CAS Method Number	3-614-CAS-581989

Print/Export Close

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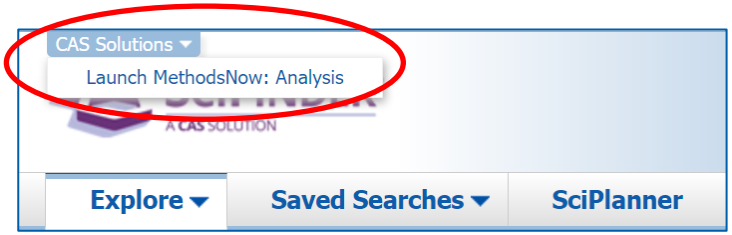
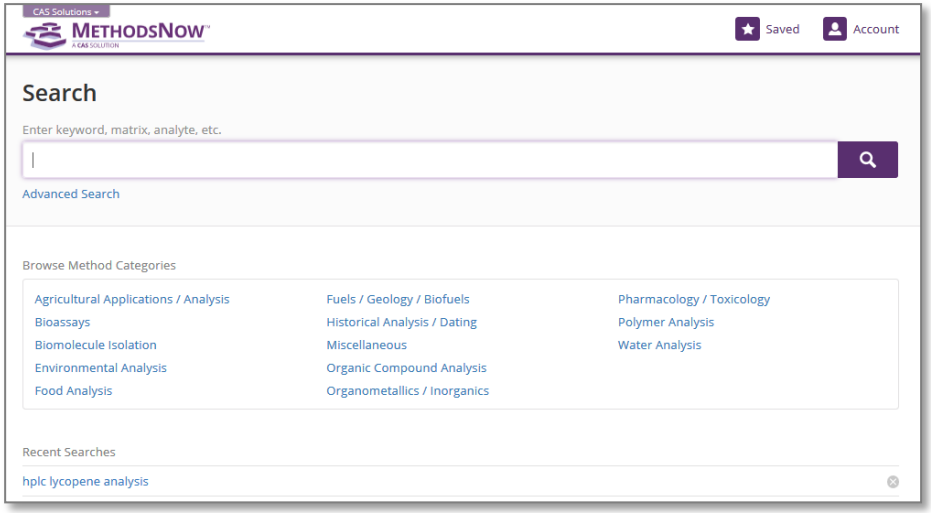
MethodsNow : Analysis

分析科學家的檢索介面



- SciFinder 平台切換 MethodsNow 分析平台



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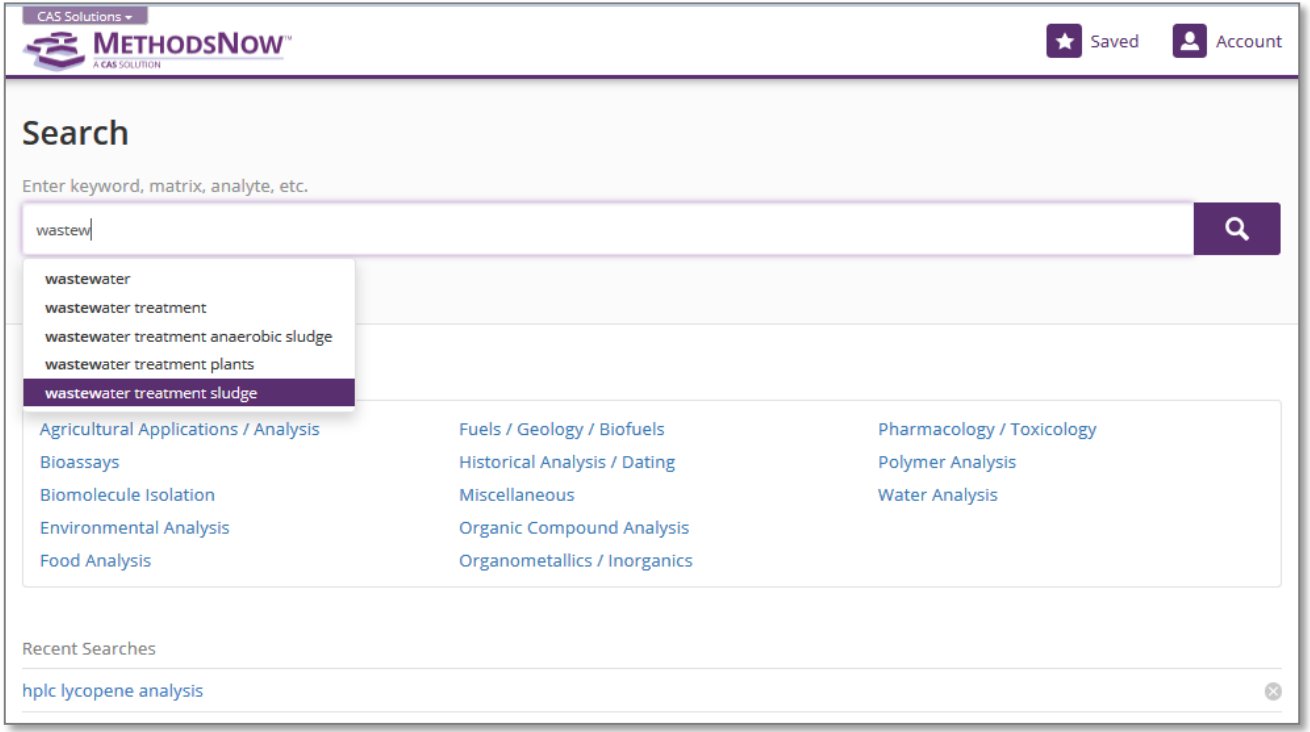
查詢廢水汙泥 (wastewater sludge)



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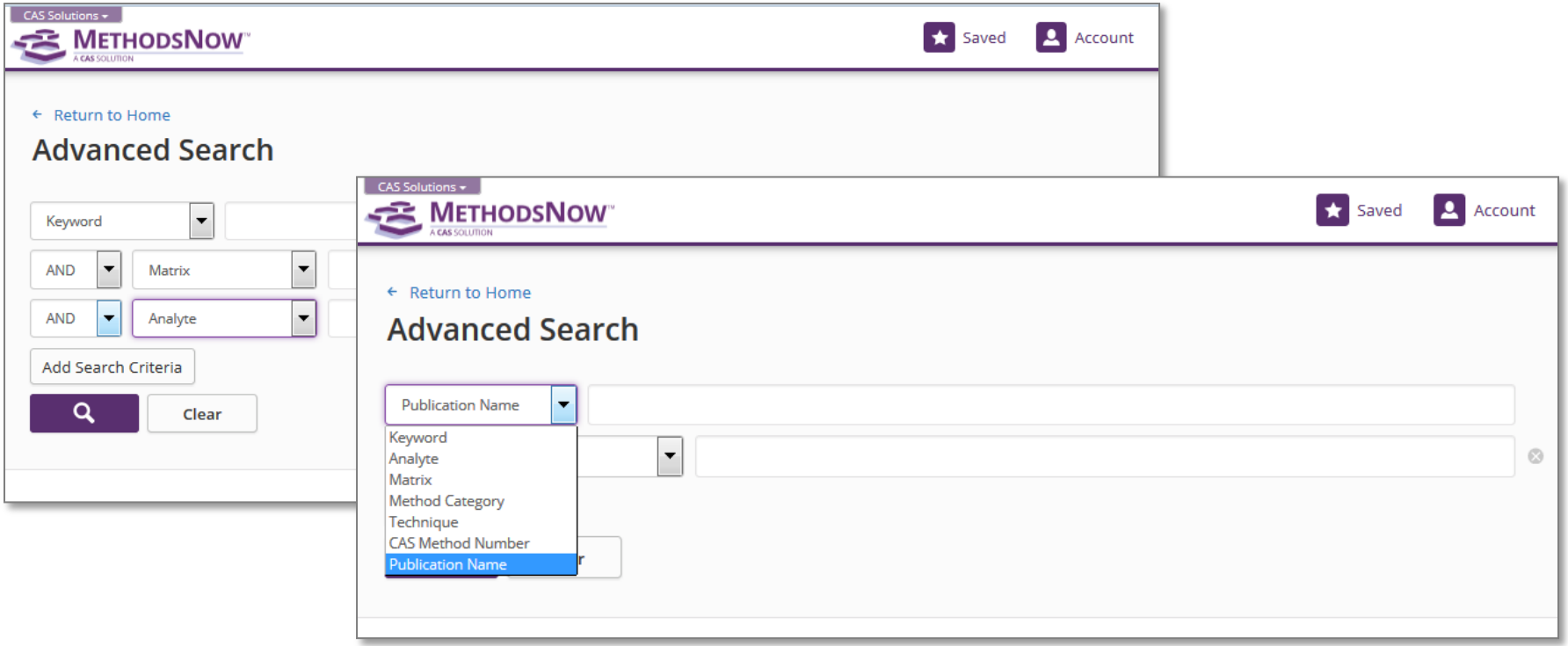
進階查詢功能



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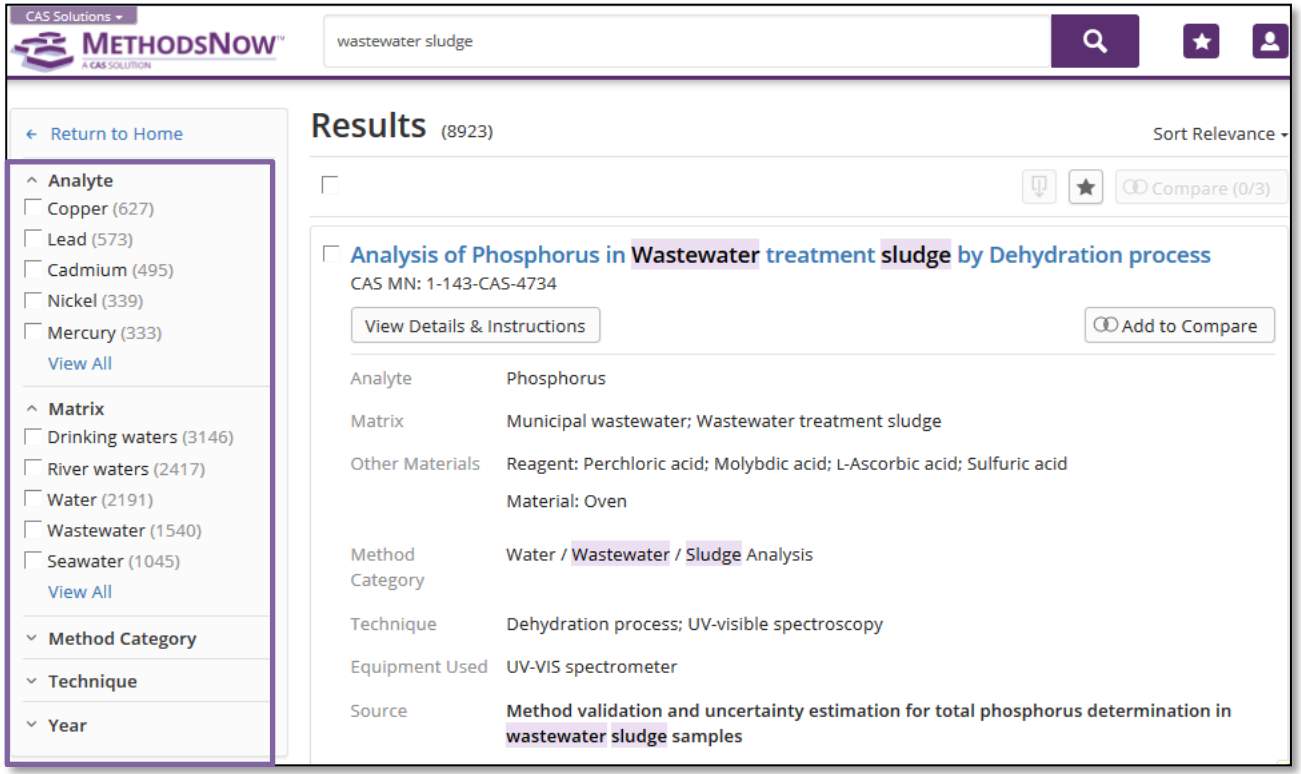
篩選器 – 讓使用者快速找到感興趣的分析物、基質或分析主題與技術



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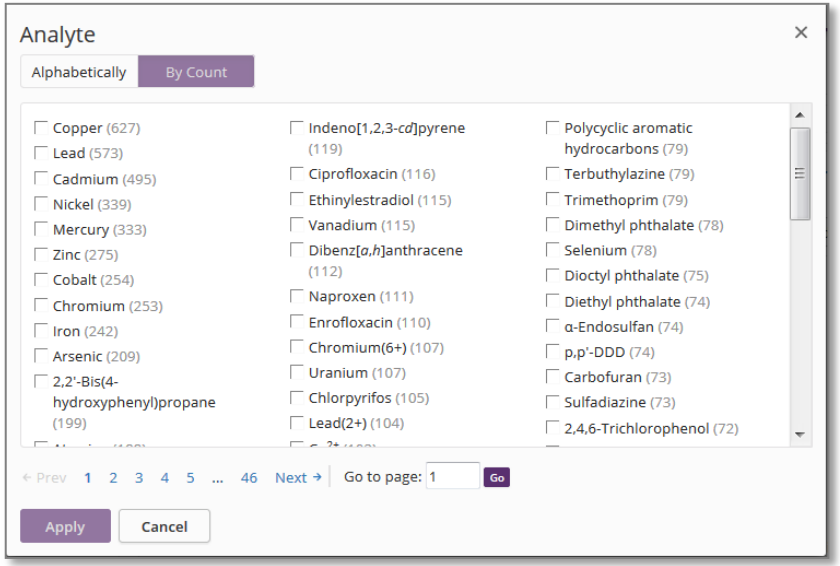
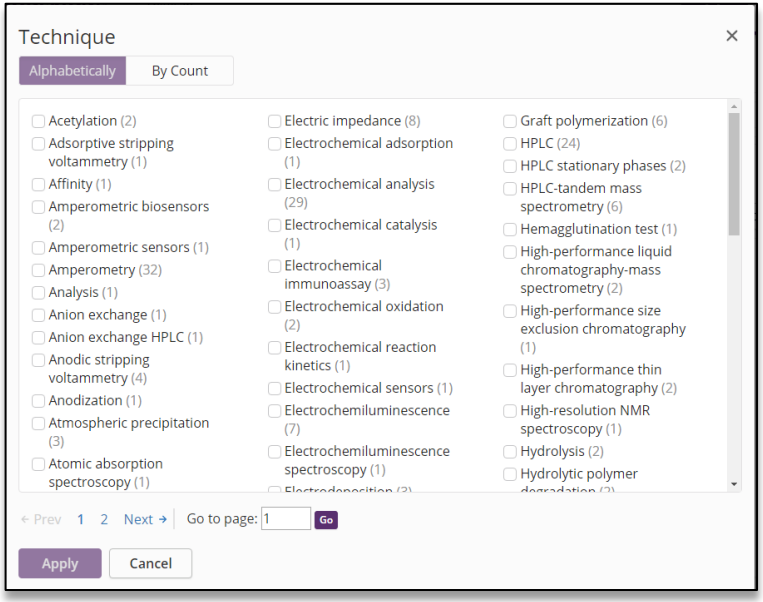
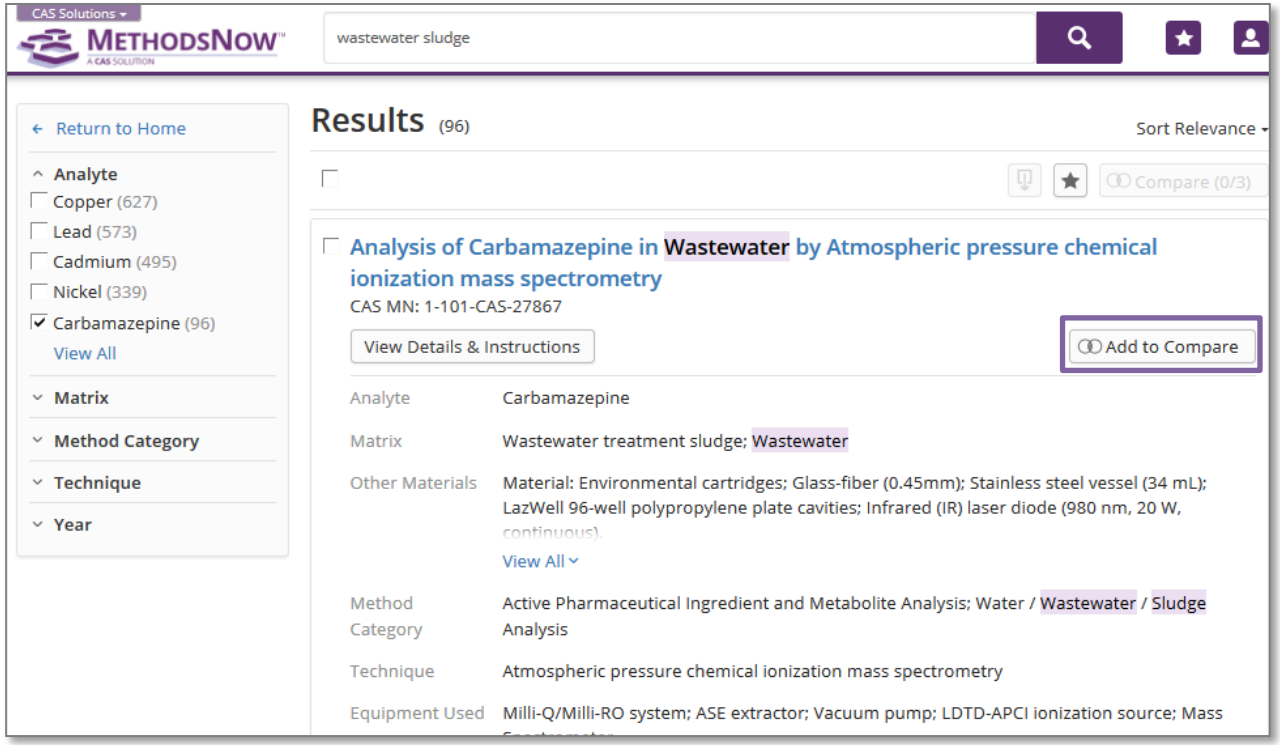
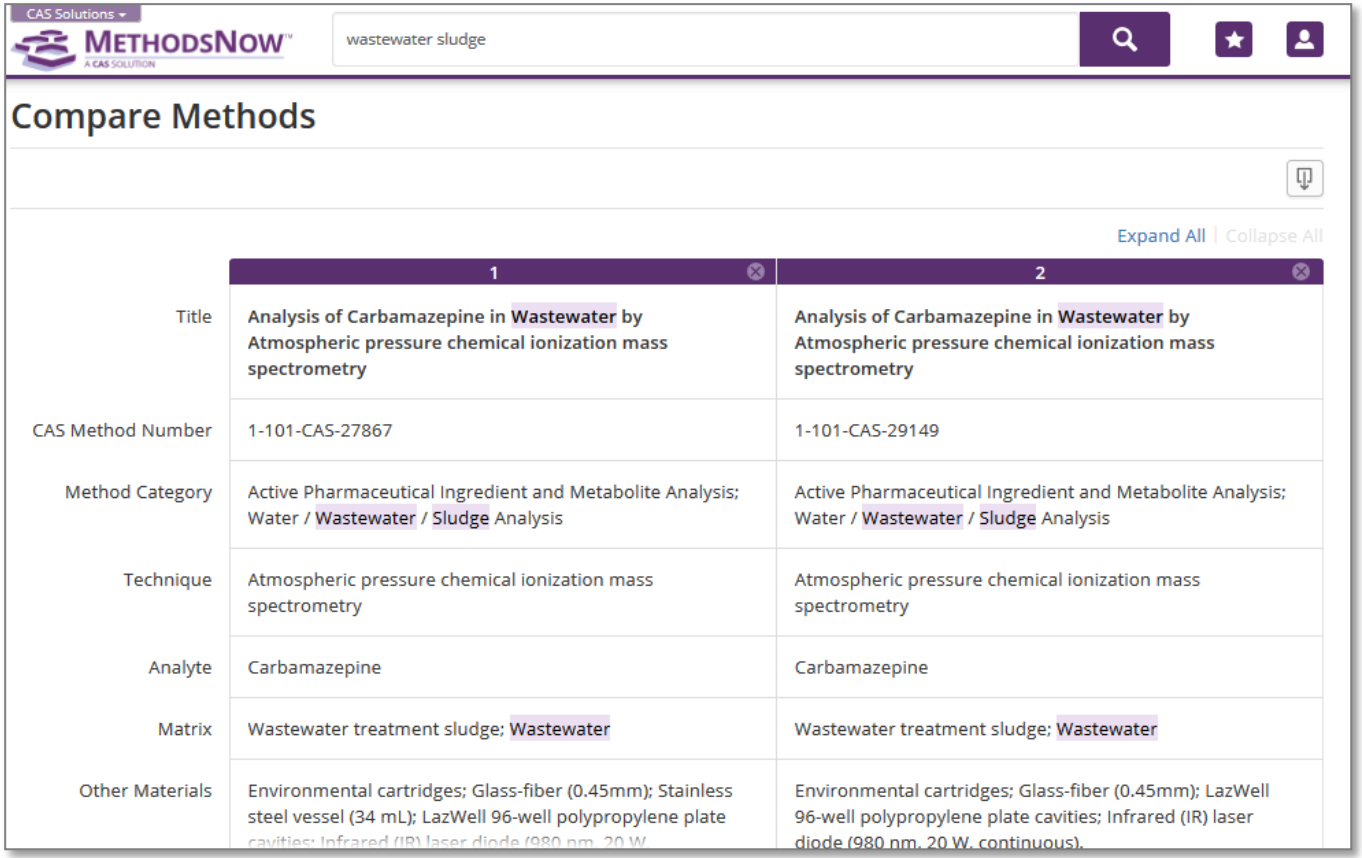


查看技術方法



比較感興趣的結果


CAS Solutions
METHODSNOW
A CAS SOLUTION
wastewater sludge
Return to Home
Analyte
Copper (627)
Lead (573)
Cadmium (495)
Nickel (339)
Carbamazepine (96)
View All
Matrix
Method Category
Technique
Year
Results (96)
Sort Relevance
Compare (0/3)
Analysis of Carbamazepine in Wastewater by Atmospheric pressure chemical ionization mass spectrometry
CAS MN: 1-101-CAS-27867
View Details & Instructions
Add to Compare
Analyte
Carbamazepine
Matrix
Wastewater treatment sludge; Wastewater
Other Materials
Material: Environmental cartridges; Glass-fiber (0.45mm); Stainless steel vessel (34 mL); LazWell 96-well polypropylene plate cavities; Infrared (IR) laser diode (980 nm, 20 W, continuous).
View All
Method Category
Active Pharmaceutical Ingredient and Metabolite Analysis; Water / Wastewater / Sludge Analysis
Technique
Atmospheric pressure chemical ionization mass spectrometry
Equipment Used
Milli-Q/Milli-RO system; ASE extractor; Vacuum pump; LDTD-APCI ionization source; Mass



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查詢結果詳細資訊

CAS Solutions

METHODSNOW™ A CAS SOLUTION

aspirin

Analysis of Aspirin by HPLC

CAS MN: 1-101-CAS-124015

Method Category: Active Pharmaceutical Ingredient and Metabolite Analysis
Technique: UV-visible spectroscopy; HPLC

Materials	Role	Image	CAS RN
Benzoic acid, 2-(acetyloxy)-, 1-methylethyl ester	analyte	View Structure	2224-88-6
Aspirin	analyte	View Structure	50-78-2
Benzoic acid, 2-(acetyloxy)-, methyl ester	analyte	View Structure	580-02-9
Benzoic acid, 2-(acetyloxy)-, butyl ester	analyte	View Structure	52602-16-1
Benzoic acid, 2-(acetyloxy)-, ethyl ester	analyte	View Structure	529-68-0
Benzoic acid, 2-(acetyloxy)-, 3-hydroxyphenyl ester	analyte	View Structure	1429226-88-9
Benzoic acid, 2-(acetyloxy)-, phenylmethyl ester	analyte	View Structure	52602-17-2
Kromasil C18 (180 × 4.6 mm, 5 µm) column	material		

Source

HPLC study of aspirin and aspirin derivatives

Ramjith, U. S.; Sunith, D. K.; Radhakrishnan, Smrithi; Sameer, P. A.

International Journal of Research in Pharmacy and Chemistry (2013), 3 (1), 1 - 5. Catchway Technologies

CODEN: IJRPFG | ISSN: 22312781

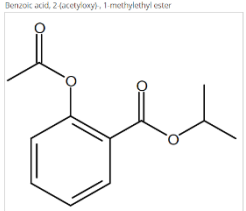
Document Sources

Abstract

A simple, rapid, precise, and accurate HPLC method for differentiating aspirin from the derivatives of Aspirin

Materials

CAS RN: 2224-88-6
$C_{12}H_{14}O_4$
Benzoic acid, 2-(acetyloxy)-, 1-methylethyl ester



Close

Abstract

A simple, rapid, precise, and accurate HPLC method for differentiating aspirin from the derivatives of Aspirin synthesized. The instrument used for carrying out HPLC was Shimadzu LCVP2010C integrated system equipped with quaternary gradient pump, Column utilized Kromasil C_{18} (180 × 4.6 mm), 5µm and the detection made possible using UV-Vis detector at a wavelength of 277 nm and the mobile phase employed was acetonitrile:MeOH 60:40(volume/volume). The R_t(Retention time) of aspirin was found to be 4.303 and that of derivatives as SR01-2.543, SR02-3.797, SR03-4.133, SR05-2.553, SR06-3.277, SR07-2.903. Proving the fact that the aspirin and its derivatives synthesized are pure.

Equipment Used

HPLC system, LCVP2010C, Shimadzu

Pump, Shimadzu

UV-Vis detector

Conditions

Instrument

Mobile phase-acetonitrile:methanol (60:40, v/v)

Wavelength-277 nm

Instructions

High performance liquid chromatography (HPLC)

1. Perform analysis using Shimadzu LCVP2010C integrated system equipped with quartenary gradient pump.
2. Use Kromasil C18 (180 × 4.6 mm, 5 µm) column.
3. Use mobile phase consisting of acetonitrile:methanol (60:40, v/v).
4. Perform detection using UV-Vis detector at 277 nm.

Validation

Retention Time	4.303 min, Aspirin
	2.543 min, Benzoic acid, 2-(acetyloxy)-, butyl ester
	3.797 min, Benzyl-2-acetoxy benzoate
	4.133 min, 3-Hydroxy phenyl-2-acetoxy benzoate

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一個強大的工具解決專利閱讀的工作流程，使科學家使用一半時間快速定位並追蹤專利中的化學物質。

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- ✓ **快速與精準定位**特定化學物質於專利文獻中的段落，縮短尋找特定化學物質的時間。

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- ✓ **物質頁碼索引**- 快速導引物質於專利本文中的所在頁碼，方便定位專利中物質出現位置。
- ✓ 全新**專利閱讀導航**-Patent Viewer，點選物質對應頁碼立即開啟Patent Viewer 瀏覽，專利訊息**解讀更容易**，並可連結SciFinder進行物質進階查詢，讓**流程更加簡化**。

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德國	韓國 KIPO	法國 inpi	

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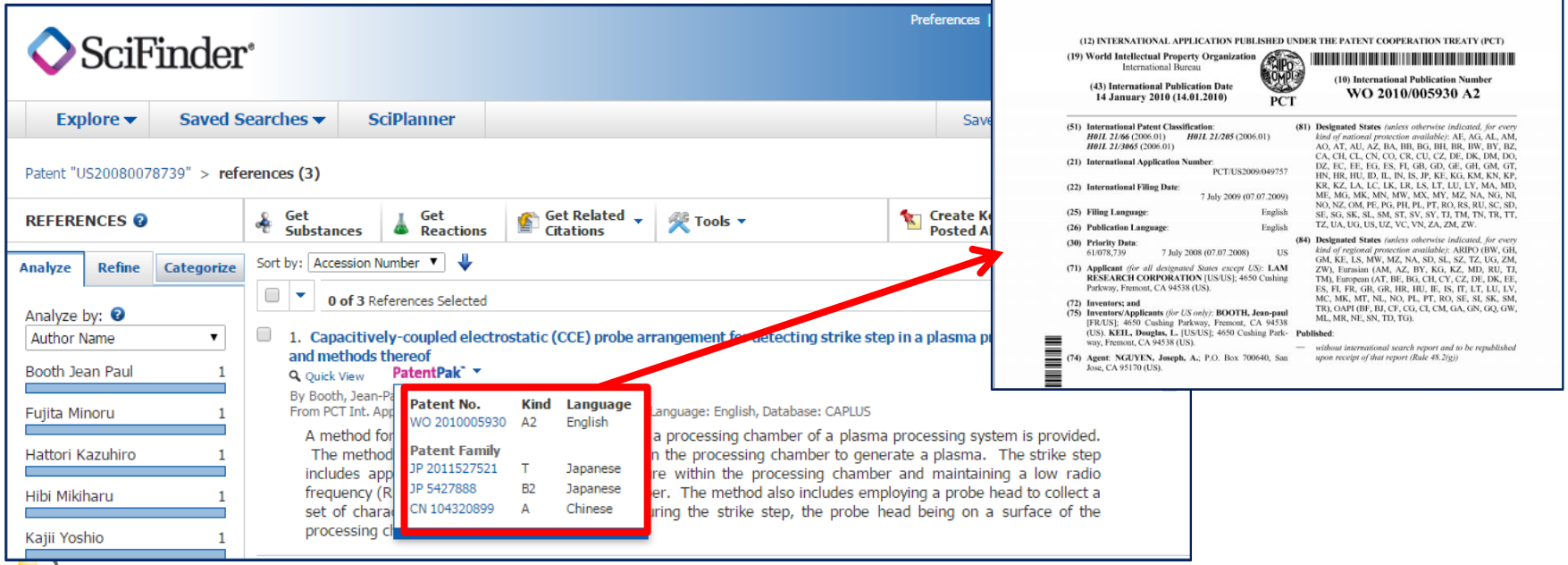
Belgium 比利時	Ireland 愛爾蘭	Portugal 葡萄牙	Sweden 瑞典
Brazil 巴西	Latvia 拉脫維亞	Romania 羅馬尼亞	Switzerland 瑞士
Croatia 克羅埃西亞	Lithuania 立陶宛	Slovakia 斯洛伐克	Turkey 土耳其

專利家族全文下載

直接點選Patent No. 即可下載全文。



專利全文取得

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1. Internal electrode structure inside inductor element and its fabrication method

By: Lee, Hwan Su; Cha, Hye Yeon; Choi, Yeong Sik; Wi, Seong Gwon
Assignee: Samsung Electro-Mechanics Co., Ltd., S. Korea

The invention relates to an inductor element contg. an internal electrode inside and its fabrication method. The inductor element contains a 1st electroplating layer set on a support member, an insulating layer covering the 1st electroplating layer and contg. an opening part exposing the upper face of the 1st electroplating layer, and a 2nd electroplating layer filled in the opening part. The internal electrode with high aspect ratio is set in the inductor element. The internal electrode is composed of the coil-shaped 1st and 2nd electroplating layers.

Patent Information

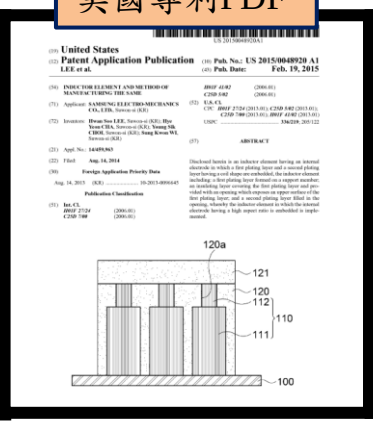
Patent No.	Kind	Language	Date	Application No.	Date
KR 1483876	B1		Jan 16, 2015	KR 2013-96645	Aug 14, 2013
JP 2015037179 PatentPak	A	Japanese	Feb 23, 2015	JP 2013-262910	Dec 19, 2013
US 20150048920 PatentPak	A1	English	Feb 19, 2015	US 2014-14459963	Aug 14, 2014

Priority Application

KR 2013-96645	A	Aug 14, 2013

日本專利PDF

美國專利PDF



韓國專利PDF

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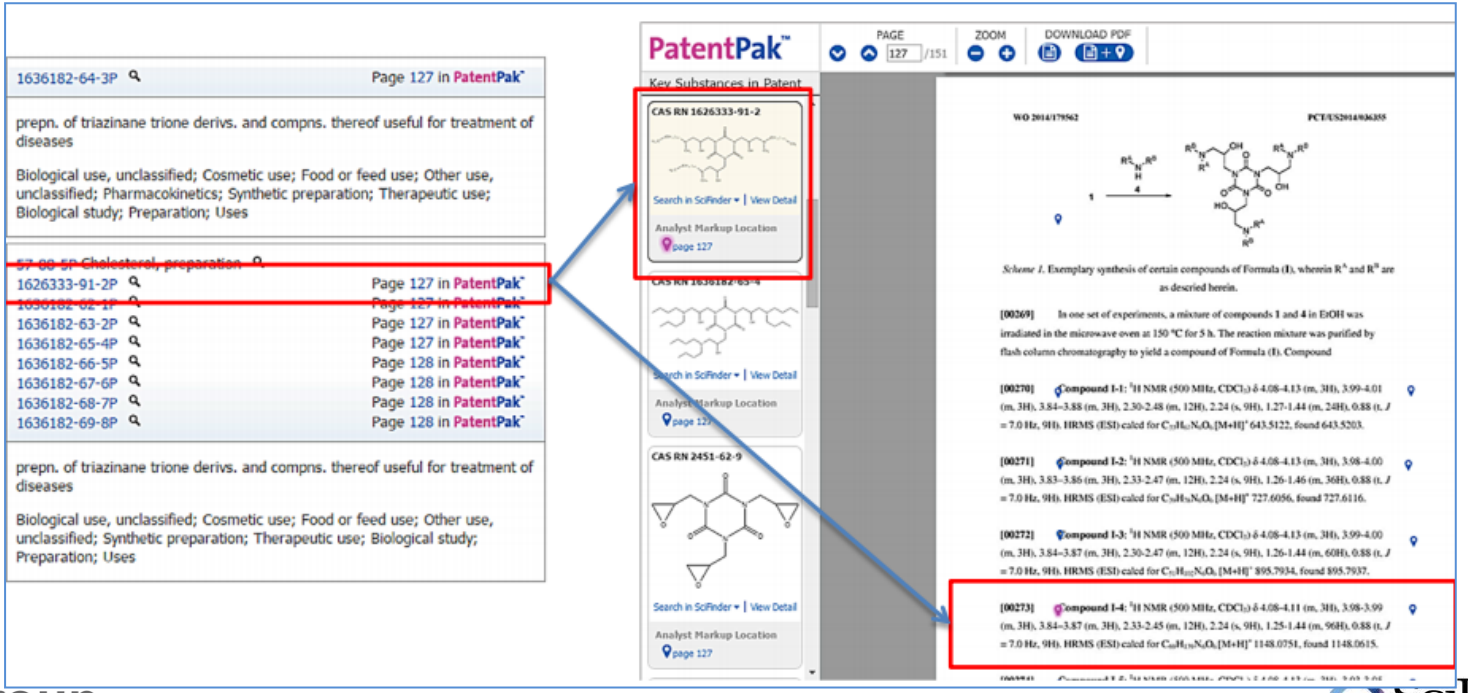
Patent Viewer

每篇專利中的索引物質 (key substances) 將會有專利全文頁碼的連結，**不需要花費時間**慢慢在專利全文尋找結構。

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Key Substances in Patent
Search in SciFinder | View Detail
Analyst Markup Location
page 127
CAS RN 1626333-91-2
CAS RN 1636182-65-4
CAS RN 2451-62-9
標示物質在專利全文中出現的頁碼與句子或反應式中。
專利全文
此篇專利重要物質(物質導航)
可直接將結構貼至畫板修改查詢，並可看物質詳細資訊

頁碼選擇

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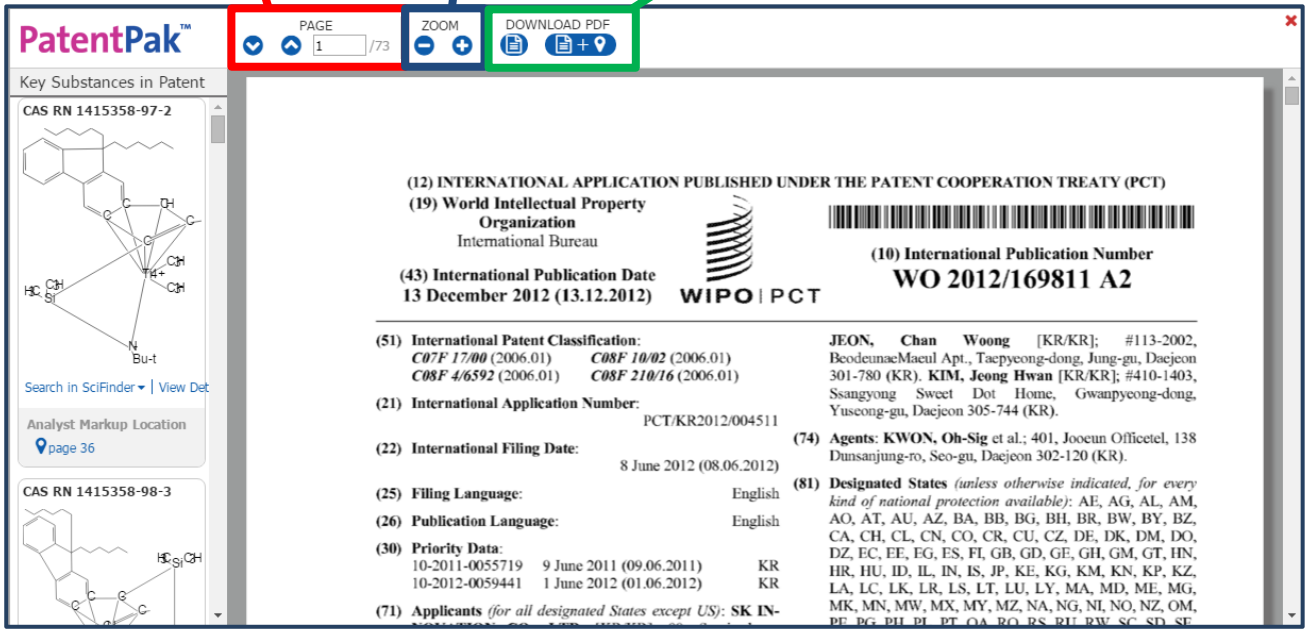

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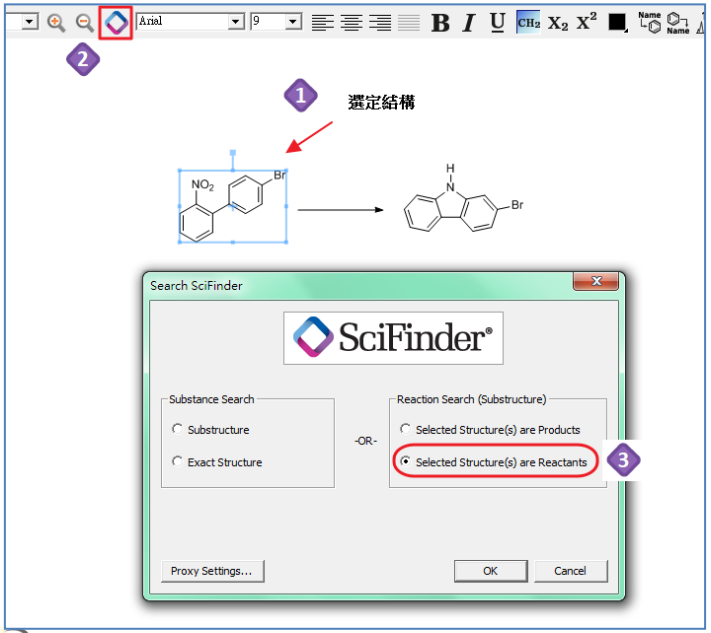

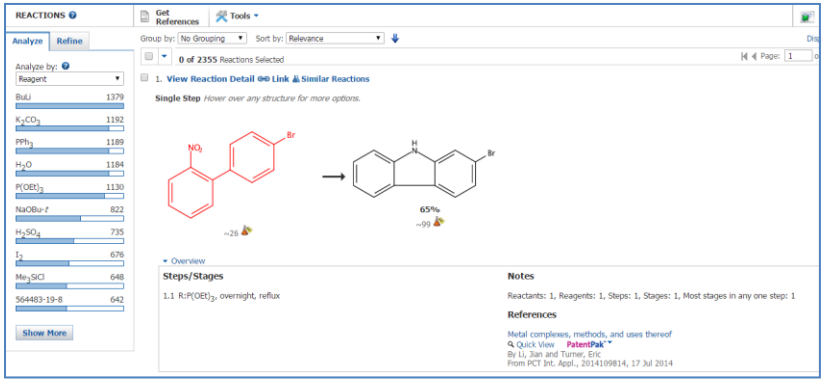

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許傳奇　　許佳儒

美國化學索摘服務社(CAS)台灣代表

Tel:+886 2571 3369#228, 213

E-mail: cas.tw@igrouptaiwan.com

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