

ACS Publications: 跨学科化学的学术资源

From American Chemical Society (ACS)

CALIS 第二十四届引进数据库培训周

赵璟 ACS数据库培训师
2026 年 5 月 12 日



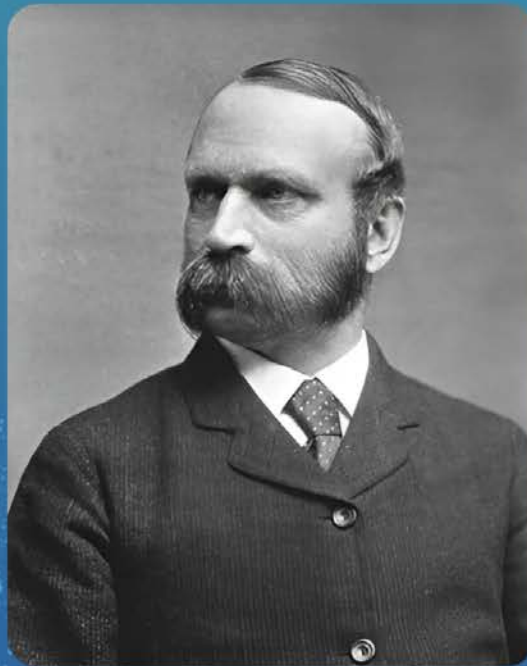
ACS is the World's Largest Scientific Society

- **ACS** 美国化学会，成立于 **1876** 年
- **140** 多个国家，超过 **16** 万名会员
- 出版化学相关领域的专业科学期刊
- 促进化学及相关学科的交流与发展



April 6, 1876

Charles F. Chandler leads the first organizational meeting of the American Chemical Society at the New York College of Pharmacy. The organizers invite chemists from New York City and the vicinity to attend.



Charles F. Chandler



May 4, 1876

Thirty-five chemists hold the founding meeting at the College of Pharmacy of the City of New York, marking the first official American Chemical Society meeting.



The first official ACS meeting

1876

1870s

1876

1890s

1900s

1910s

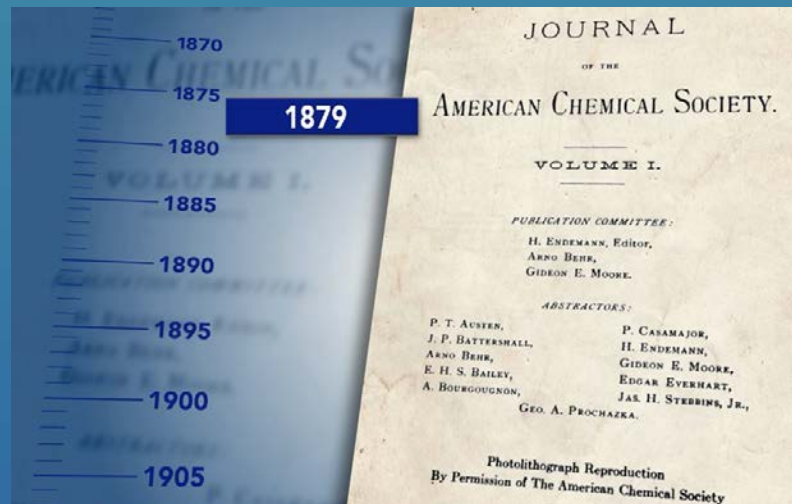
1920s



ACS Publications
Most Trusted. Most Cited. Most Read.

1879

The American Chemical Society begins publishing its flagship journal, *the Journal of the American Chemical Society (JACS)*, in April 1879. The journal's inaugural Editor-in-Chief – Hermann Endemann – leads the journal for one year and then returns briefly in 1881 for an additional year, stewarding the journal that – since 2021 – is led by Professor Erick Carreira.



美国化学会志 JACS

1870s

1879

1890s

1900s

1910s

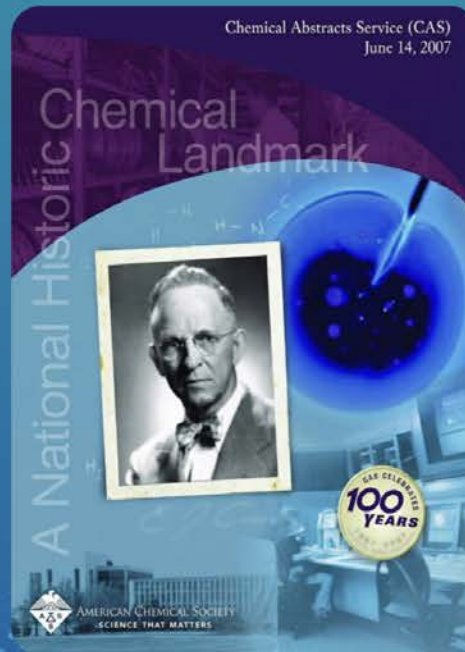
1920s



January, 1907

Chemical Abstracts debuts as a comprehensive, separate journal of abstracts, later becoming *Chemical Abstracts Service*, and now *CAS*.

化学文摘 Chemical Abstracts



1870s

1890s

1900s

1907

1910s

1920s



ACS Publications
Most Trusted. Most Cited. Most Read.

1908

The American Chemical Society creates its first five divisions, including:

- Agricultural & Food Chemistry
- Industrial & Engineering Chemistry
- Organic Chemistry
- Physical Chemistry
- Fertilizer Chemistry

农业化学
食品化学
化学工程
有机化学
物理化学



1908

1870s

1890s

1900s

1908

1910s

1920s



ACS Publications 数据库出版物资源

pubs.acs.org

- ACS Journals 80 多种电子期刊
- ACS eBooks 1700 多本电子图书
- ACS In Focus 电子图书
- 化学与工程新闻
- 试剂标准手册
- 学术交流指南

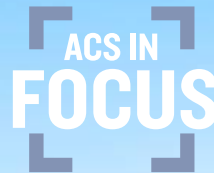
全库资源超过 **150** 万篇文章，涵盖
20 多个与化学相关的研究领域。



ACS Journals
电子期刊



ACS eBooks
电子图书



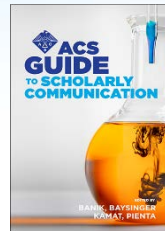
ACS In Focus
电子图书



**C&EN 化学
与工程新闻**



**ACS 试剂化学品
参考工具书**



ACS Guide
学术交流指南

ACS Journals 学术期刊

pubs.acs.org

80 多种高品质的专业科学期刊

年发文量 74,000 篇同行评审文章（全球作者）

年下载量 3.45 亿（来自全球机构）

ACS 全文访问量来自中国的比例最高

根据 2024 年 JCR Citation Reports:

- ACS 期刊影响因子中位数达到 5.0
- ACS 期刊总被引用次数超过 470 万
- ACS 期刊在五个学科类别位居被引用量榜首



WE COVER EVERY ASPECT OF CHEMISTRY

ACS 的很多期刊是跨学科的，涵盖了广泛的研究领域课题的前沿研究成果。研究需要寻求的答案可能不仅限于一种 **ACS** 期刊。

ACS 期刊涵盖的学科领域包括但不限于：

无机化学	物理化学	能源	农业与食品化学
有机化学	理论与计算化学	催化	生物与药物化学
有机金属化学	高分子科学	材料科学	化学工程与工业化学
分析化学	化学教育	纳米科学	地球、空间与环境化学

1870

1875

1879

1880

1885



15.7
Impact
Factor

1905

JOURNAL

OF THE

AMERICAN CHEMICAL SOCIETY.

VOLUME I.

PUBLICATION COMMITTEE:

H. ENDEMANN, Editor,
ARNO BEHR,
GIDEON E. MOORE.

ABSTRACTORS:

P. T. AUSTEN,
J. P. BATTERSHALL,
ARNO BEHR,
E. H. S. BAILEY,
A. BOURGOUNGON,

P. CASAMAJOR,
H. ENDEMANN,
GIDEON E. MOORE,
EDGAR EVERHART,
JAS. H. STEBBINS, JR.,
GEO. A. PROCHAZKA.

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Journal of the American Chemical Society

2 Year Impact Factor: 15.7 | Citations: 601,485



2024 IMPACT FACTOR

15.7

美国化学会志 JACS 创刊于 1879 年

1. ACS 的旗舰期刊，美国化学会的第一本期刊
2. 每年出版 2500 多篇科研文章，每周出版一期
3. 发表化学各个领域里顶尖的基础和应用研究成果
4. 化学领域里被引用次数最多的跨学科化学期刊

期刊收录研究方向：化学，跨学科化学
Indexed in: CAS, SCIE, Scopus, PubMed, etc.

Chemical Reviews

2 Year Impact Factor: 55.8 | Citations: 246,622



2024 IMPACT FACTOR

55.8

Chemical Reviews 是世界著名的化学期刊，涵盖了化学学科所有的研究领域，它为有机化学，无机化学，物理化学，分析化学，理论化学和生物化学各领域的重要研究提供全面、权威、关键和可读性强的综述文章。

Chemical Reviews 是化学学科类别里影响因子最高的期刊。

期刊收录研究方向：化学，跨学科化学
Indexed in: CAS, SCIE, Scopus, PubMed, etc.

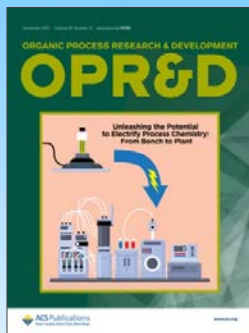
Basic Science Chemistry 化学基础科研



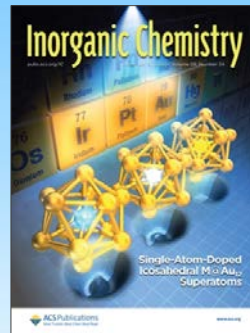
有机化学



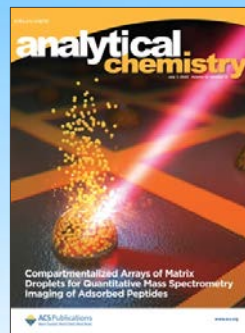
有机快报



有机工艺



无机化学



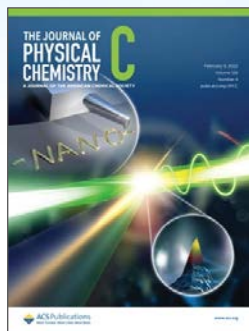
分析化学



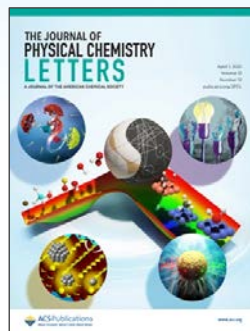
物理化学 A



物理化学 B



物理化学 C

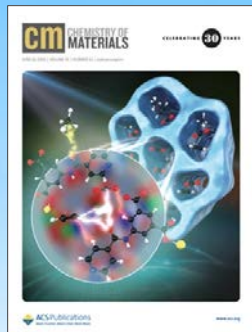


物理化学快报



化工研究

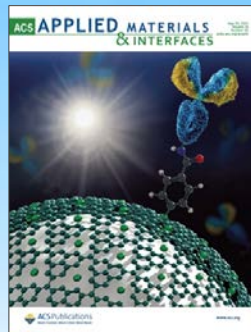
Materials Science & Engineering 材料科学与工程



材料化学



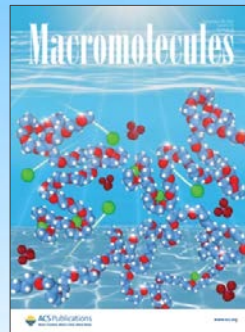
材料快报



应用材料&界面



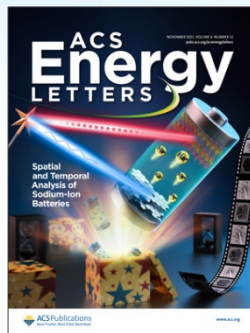
纳米材料



高分子材料



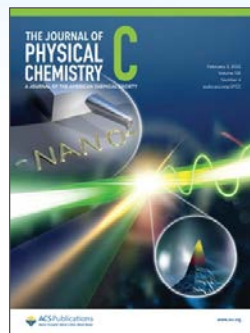
生物材料



能源材料快报



催化科学



材料物理化学



材料研究综述 15

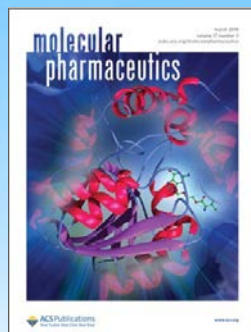
Pharmaceuticals 药物化学



药物化学领域
世界知名期刊



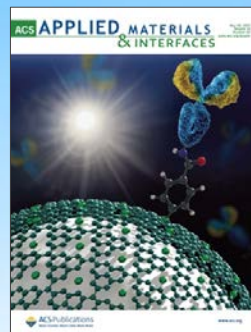
药物化学快报



分子药剂学



药物制剂



界面现象&应用



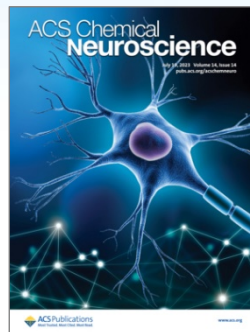
天然产物研究



毒理学



药学与转化科学



化学神经科学



传染病研究

Journal of Medicinal Chemistry

2 Year Impact Factor: 6.8



2024 IMPACT FACTOR

6.8

Journal of Medicinal Chemistry 是药物化学领域被引用次数最多的期刊，研究范围包括：

1. 化合物分子结构与生物活性之间的关系
2. 先导化合物的设计、合成、优化和评价
3. 药物靶点的发现
4. 药物的作用机理和代谢过程
5. 药物化学领域新颖的方法与应用

期刊收录研究方向：药物化学 (JCR - Q1区)
Indexed in: CAS, SCIE, Scopus, PubMed, etc.

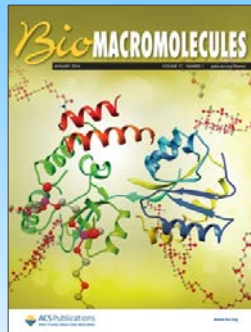
Biotechnology 生物技术



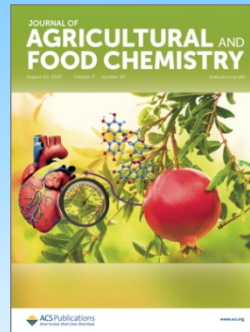
生物化学



生物共轭化学



生物大分子



农业&食品科学



生物材料



天然产物研究



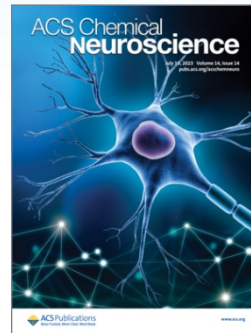
蛋白组学



合成生物学



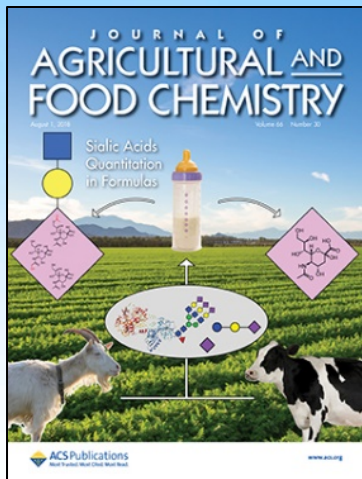
化学生物学



化学神经科学 18

Journal of Agricultural and Food Chemistry

2 Year Impact Factor: 6.2



2024 IMPACT FACTOR

6.2

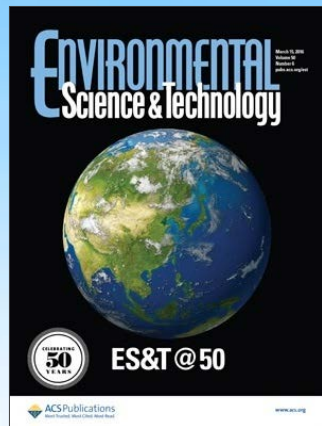
JAFC 期刊是被引用次数最高的食品科学和技术类期刊

1. 农业和环境化学
2. 生物活性成份，代谢产物和功能
3. 生物燃料和生物材料，生物技术和生物转化
4. 化学和生物学中的香味和口感
5. 食品和饮料的化学/生物化学
6. 食品安全和毒理学
7. 新的分析方法，应用于农业和食品的组学技术

期刊收录研究方向：农学，食品科学和技术 (JCR - Q1区)

Indexed in: CAS, SCIE, Scopus, PubMed, etc.

Environmental Science 环境科学



**Environmental
Science &
Technology**

环境科学与技术



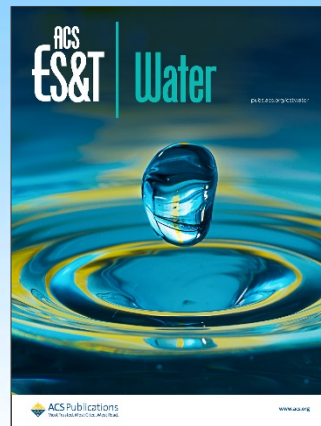
**Environmental
Science &
Technology Letters**

环境科学与技术
快报期刊



**ACS ES&T
Engineering**

ES&T 子刊
环境工程



**ACS ES&T
Water**

ES&T 子刊
水环境

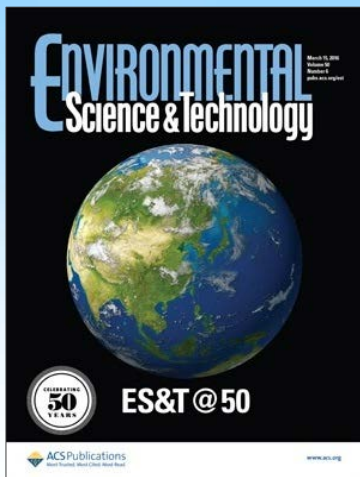


**ACS ES&T
Air**

ES&T 子刊
大气环境

Environmental Science & Technology

2 Year Impact Factor: 11.3



2024 IMPACT FACTOR

11.3

Environmental Science & Technology 是高影响力的环境科学与技术研究期刊，是引领思想、影响政策的基础性刊物。

1. 人为对大气的影响、室内空气和大气中污染物
2. 生物地球化学循环
3. 水生和陆地环境中的污染物
4. 生态毒理学与公共卫生
5. 能源与气候
6. 数据科学、可持续发展、治理和资源回收

期刊收录研究方向：环境工程 (JCR - Q1区)

Indexed in: CAS, SCIE, Scopus, PubMed, etc.

Open Access Journals

美国化学会旗下的开放获取期刊总共有 19 种，分别具有不同的内容和定位。

ACS Central Science, ACS Omega, JACS Au 多学科化学期刊

ACS Au Journals 系列期刊

- ACS Bio & Med Chem Au
- ACS Engineering Au
- ACS Environmental Au
- ACS Materials Au
- ACS Measurement Science Au
- ACS Nanoscience Au
- ACS Organic & Inorganic Au
- ACS Physical Chemistry Au
- ACS Polymers Au



ACS 与中国的高校及科研机构的合作期刊

Precision Chemistry

2023 University of Science and Technology of China

Chemical & Biomedical Imaging

2023 Nanjing University

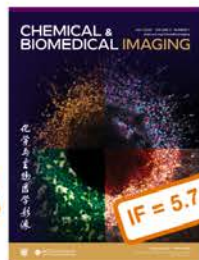
Environment & Health

2023 the Research Center for Eco-Environmental Sciences, CAS

ACS与中国机构合作创办的期刊

2020

2025



期刊主编
黄嘉兴 教授



期刊主编
杨金龙 院士



期刊主编
郭子建 院士



期刊主编
江桂斌 院士



期刊主编
任其龙 院士



期刊主编
李灿 院士



期刊主编
陈学思 院士



期刊主编
杨万里 博士



有奖答题

题目1：ACS 出版的第一本期刊是什么？

A. ACS Catalysis

B. Chemical Reviews

C. Journal of the American Chemical Society

答案：C

A. ACS Catalysis

B. Chemical Reviews

C. Journal of the American Chemical Society

题目2：ACS 期刊包含哪些学科领域？【多选题】

- A. 化学，化工，材料科学
- B. 药学，生物，农林食品，环境科学
- C. 机械，电子电气，计算机科学

答案：A B

A. 化学，化工，材料科学

B. 药学，生物，农林食品，环境科学

C. 机械，电子电气，计算机科学

ACS eBooks

<https://pubs.acs.org/series/symposium>

- 包含 **38000+** 章节，已出版 **1700+** 图书。
- 涵盖几乎所有受化学影响的学科，包括政策、历史和教育。
- 由世界顶尖的科学家撰写，包括 **41** 位诺贝尔奖获得者。
- 高质量的内容，全部章节经过同行评审。
- 可全文检索，支持按章节，关键词，书名，作者，学科等进行检索。
- 与 ACS 期刊一样的在线平台访问，方便延伸阅读和交叉查找文献。

ACS 电子图书包含两个部分：

- 新书：最近 4 年出版的图书，共约 120 本，每年上线 30-35 本新书。
- 存档书：新书以外的所有图书，最早回溯到 1949 年，超过 1600 本。



ACS Publications
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ACS IN FOCUS

<https://pubs.acs.org/series/infocus>

- **ACS In Focus** 系列电子书是快速掌握最新课题的首选读物。
- 采用浅显易懂的语言，介绍最前沿的新兴科学话题，篇幅精炼，可在 4 - 6 小时内读完。
- 填补学生从课堂到期刊文献之间的学习资料空缺。
- 丰富的在线阅读功能：弹出式术语表、视频采访、动画等。

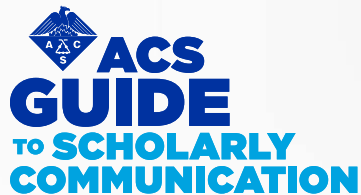


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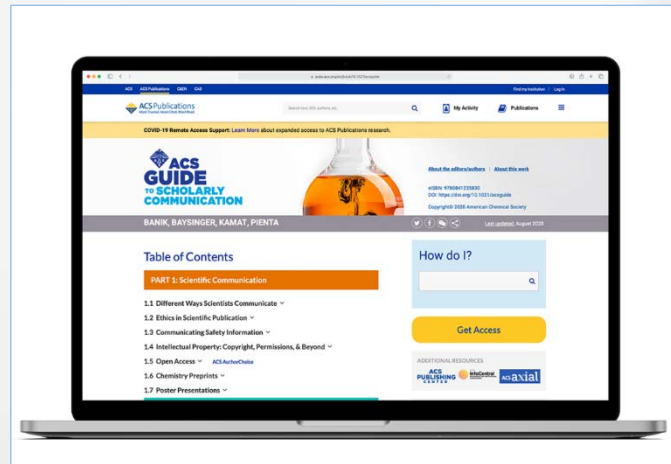
<https://doi.org/10.1021/acsguide>

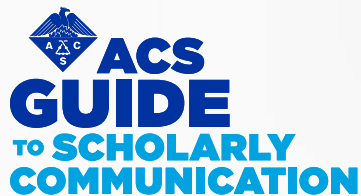
■ ACS Guide to Scholarly Communication

学术交流指南是一本在线参考工具书，旨在为学生、研究人员、教育工作者和图书馆员提供掌握学术交流所需的指导与建议。

■ 适用于广泛的学科领域，蕴含生动的多媒体视频资源和科技论文写作的指导。

■ 适用人群：本科生，研究生，教师。





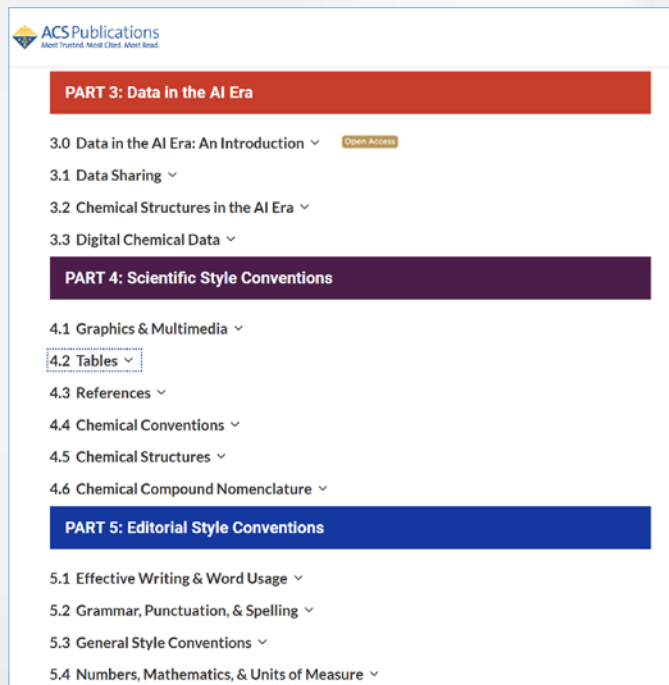
<https://doi.org/10.1021/acsguide>

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■ 适用人群：本科生，研究生，教师。



- **ACS Reagent Chemicals** 是一份权威的化学品试剂标准手册。
- 已为 500 多种常用的化学品提供最高级别的纯度标准。
- 提供符合本标准的化学品理化性质，详细的规格参数以及相应的测试方法。
- 美国药典 **USP** 使用符合此标准的化学品用于药物测试。



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- 已为 500 多种常用的化学品提供最高级别的纯度标准。
- 提供符合本标准的化学品理化性质，详细的规格参数以及相应的测试方法。
- 美国药典 **USP** 使用符合此标准的化学品用于药物测试。

pubs.acs.org/doi/book/10.1021/acsreagents

Acetone

(2-Propanone)

Part 4. Monographs for Reagent Chemicals: General Descriptions, Specifications, and Tests
eISBN: 9780841230460
Tom Tyrer Chair, ACS Committee on Analytical Reagents
James Francis Secretary, ACS Committee on Analytical Reagents

Authoritative Version: This version is current as of 01 Jun 2016.

ABSTRACT

This monograph for Acetone provides, in addition to common physical constants, a general description including typical appearance, applications, change in state (approximate), aqueous solubility, and density. The monograph also details the following specifications and corresponding tests for verifying that a substance meets ACS Reagent Grade specifications including: Assay, Isopropyl Alcohol, Methanol, Color (APHA), Residue after Evaporation, Solubility in Water, Titrable Acid, Titrable Base, Aldehyde, Substances Reducing Permanganate, Water, and Ultraviolet Spectrophotometry.

$(\text{CH}_3)_2\text{CO}$

Formula Wt 58.08

CAS No. 67-64-1

SUPPLEMENTS & UPDATES

Published	Authoritative	Expired	Type	Summary	Other Versions
28 Feb 2017	01 Jun 2016		Original	First on-line publication, based on 11th ed.	

Suitable for general use or in ultraviolet spectrophotometry. Product labeling shall designate the uses for which suitability is represented on the basis of meeting the relevant specifications and tests. The ultraviolet spectrophotometry specifications include all of the specifications for general use.

GENERAL DESCRIPTION

Typical appearance liquid with a characteristic odor
Applications liquid chromatography; cleaning glassware; extraction of solid waste
Change in state (approximate) boiling point, 56 °C

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ACS Reagent Chemicals

Monograph

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Aqueous solubility	miscible with water
Density	0.79

SPECIFICATIONS

General Use

Assay	≥99.5% (CH ₃) ₂ CO
	Maximum Allowable
Color (APHA)	10
Residue after evaporation	0.001%
Solubility in water	Passes test
Titration acid	0.0003 meq/g
Titration base	0.0006 meq/g
Aldehyde (as HCHO)	0.002%
Isopropyl alcohol	0.05%
Methanol	0.05%
Substances reducing permanganate	Passes test
Water (H ₂ O)	0.5%

Specific Use

Ultraviolet Spectrophotometry	
Wavelength (nm)	Absorbance (AU)
400	0.01
350	0.02
340	0.10
330	1.00

TESTS

Assay, Isopropyl Alcohol, and Methanol

Analyze the sample by gas chromatography using the general parameters cited in [Part 2: Chromatography; Recommended Procedures: Gas Chromatography]. The following specific conditions are also required.

Column: Type I, methyl silicone

Measure the area under all peaks, and calculate the area percent for acetone, isopropyl alcohol, and methanol. Correct for water content.

Color (APHA)

[Part 2: Measurement of Physical Properties: Color (APHA): Procedure for Color (APHA)].

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DOI: 10.1021/acsreagents.4005.30-60M
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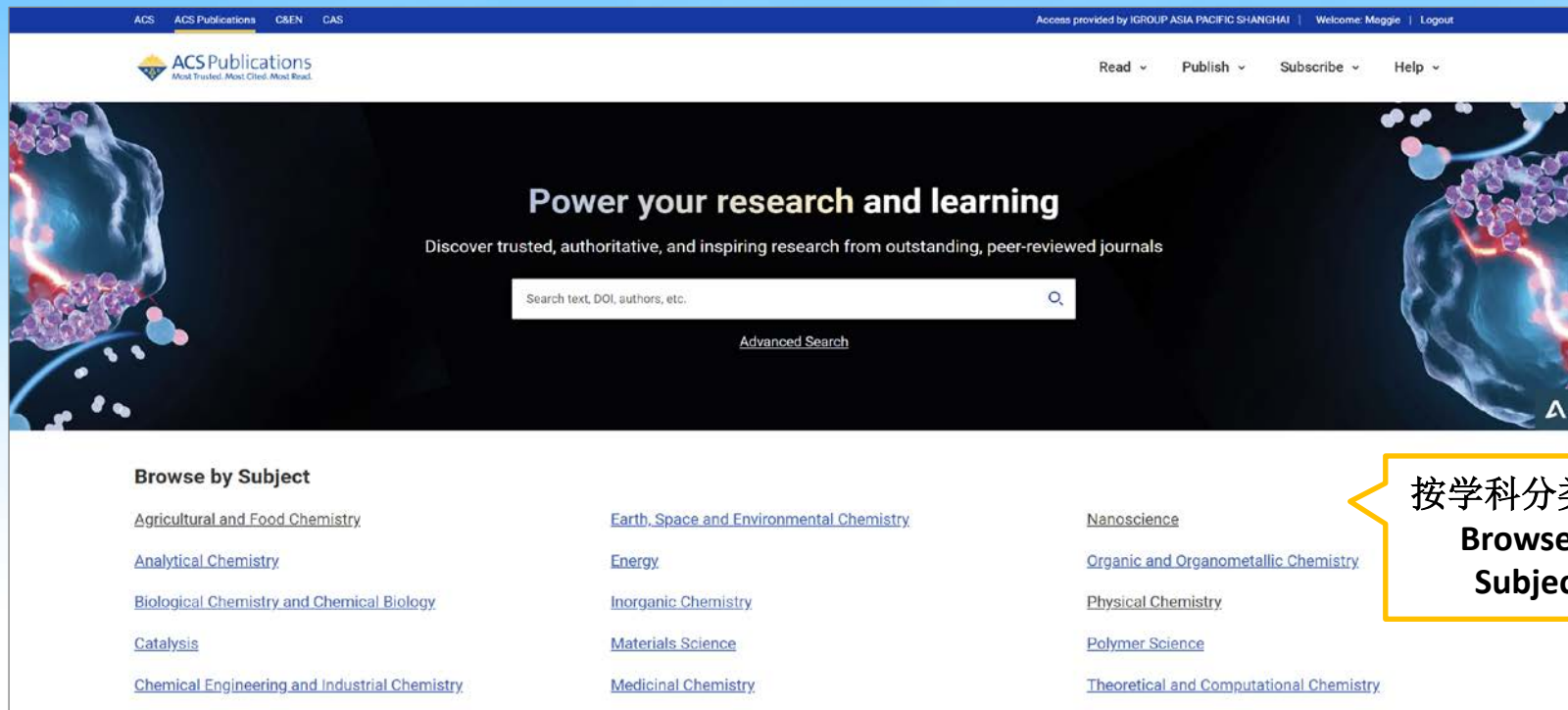
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Patrick Pfaff, Kusal T. G. Samarasinghe, Craig M. Crews*, and Erick M. Carreira*

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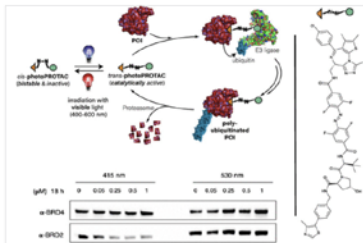
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Abstract

Off-tissue effects are persistent issues of modern inhibition-based therapies. By merging the strategies of photopharmacology and small-molecule degraders, we introduce a novel concept for persistent spatiotemporal control of induced protein degradation that potentially prevents off-tissue toxicity. Building on the successful principle of bifunctional all-small-molecule Proteolysis Targeting Chimeras (PROTACs), we designed photoswitchable PROTACs (**photoPROTACs**) by including *ortho*-F₄-azobenzene linkers between both warhead ligands. This highly bistable yet photoswitchable structural component leads to reversible control over the topological distance between both ligands. The *azo-cis*-isomer is observed to be inactive because the distance defined by the linker is prohibitively short to permit complex formation between the protein binding partners. By contrast, the *azo-trans*-isomer is active since it can engage both protein partners to form the necessary and productive ternary complex. Importantly, due to the bistable nature of the *ortho*-F₄-azobenzene moiety employed, the photostationary state of the **photoPROTAC** is persistent, with no need for continuous irradiation. This technique offers reversible on/off switching of protein degradation that is compatible with an intracellular environment and, therefore, could be useful in experimental exploration of biological signaling pathways—such as those crucial for oncogenic signal transduction. Additionally, this strategy may be suitable for therapeutic intervention to address a variety of diseases. By enabling reversible activation and deactivation of protein degradation, **photoPROTACs** offer advantages over conventional photocaging strategies that irreversibly release active agents.



ACS Central Science

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X Pfaff^{1,2}, Kusal T. G. Samarasinghe^{2,3}, Craig M. Crews^{2,3,4} and Erick M. Carreira¹

¹Department of Chemistry and Applied Biosciences, Laboratory of Organic Chemistry, University of Zurich, Winterthurerstrasse 190, CH-8057 Zurich, Switzerland

²Department of Molecular, Cell, and Developmental Biology, Yale University, 366 Prospect Street, New Haven, CT 06511, United States

³Department of Chemistry, Yale University, New Haven, CT 06511, United States

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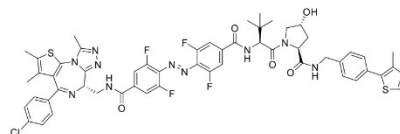
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(2S,4R)-1-((S)-2-(4-((E)-4-(((S)-4-(4-chlorophenyl)-2,3,9-trimethyl-6H-thieno[3,2-f][1,2,4]triazolo[4,3-a][1,4]diazepin-6-yl)methyl)carbamoyl)-2,6-difluorophenyl)diazepyl)-3,5-difluorobenzamido)-3,3-dimethylbutanoyl)-4-hydroxy-N-(4-(4-methylthiazol-5-yl)benzyl)pyrrolidine-2-carboxamide (photoPROTAC-1)



JQ-1 amine **18** (10.5 mg, 28.0 μ mol, 1.00 equiv) and acid **54** (21.4 mg, 28.0 μ mol, 1.00 equiv) were dissolved in anhydrous DMF (0.28 mL, 0.1 M). DIPEA (12 μ L, 85 μ mol, 3.00 equiv) and HATU (11.3 mg, 30.0 μ mol, 1.05 equiv) were added to the reaction mixture at room temperature. After 2 hours, the reaction mixture was quenched by addition of sat. aq. NaHCO₃ and the aq. phase was extracted three times with EtOAc. The combined org. layers were washed with brine and dried over sodium sulfate. Residual DMF and tetramethylurea were removed by lyophilization after freezing in a water/dioxane mixture. The crude product was further purified by flash column chromatography (94% EtOAc/4% iPrOH/2% H₂O) to afford photoPROTAC-1 as an orange oil (16.0 mg, 14.0 μ mol, 51%).

Rf = 0.36 (85% EtOAc/10% iPrOH/5% H₂O).

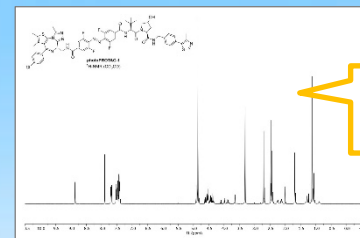
¹H NMR (500 MHz, CD₃OD) δ = 8.87 (s, 1H), 7.70 (dd, *J* = 5.1, 1.6 Hz, 2H), 7.67 (dd, *J* = 5.1, 1.6 Hz, 2H), 7.52 (d, *J* = 8.5 Hz, 2H), 7.48 (d, *J* = 8.5 Hz, 2H), 7.44 – 7.40 (m, 4H), 4.91 (s, 1H), 4.65 – 4.50 (m, 4H), 3.87 (dd, *J* = 13.6, 7.0 Hz, 2H), 4.35 (d, *J* = 15.4 Hz, 1H), 3.98 (d, *J* = 11.0 Hz, 1H), 3.87 (dd, *J* = 11.0, 3.8 Hz, 1H), 2.71 (s, 3H), 2.47 (s, 3H), 2.43 (s, 3H), 2.29 – 2.22 (m, 1H), 2.15 – 2.09 (m, 1H), 1.69 (s, 3H), 1.13 (s, 9H).

¹³C NMR (126 MHz, CD₃OD) δ = 174.4, 172.0, 166.8, 166.7, 166.5, 157.4, 156.1, 155.3, 153.0, 152.2, 149.0, 140.3, 139.2, 138.1, 138.1, 134.3, 133.5, 133.4, 133.3, 133.3, 132.0, 132.0, 131.5, 131.4, 131.3, 130.4, 129.8, 129.0, 113.4, 113.1, 71.1, 60.9, 59.9, 58.2, 56.8, 43.7, 42.9, 39.0, 37.2, 27.1, 15.8, 14.4, 12.9, 11.6.

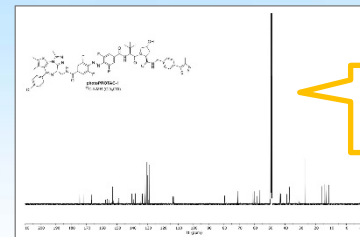
¹⁹F NMR (471 MHz, CD₃OD) δ = -121.4, -121.5.

IR: 3322, 2925, 28855, 1665, 1533, 1427, 1343, 1243, 1090, 1047, 967, 843.

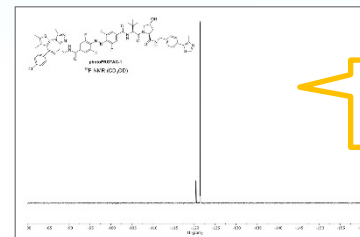
ESI-MS: calcd. for C₅₀H₅₃ClF₆N₁₁O₅S₂ [M+H]⁺ 1108.3135, found 1108.3144.



¹H-NMR



¹³C-NMR



¹⁹F-NMR

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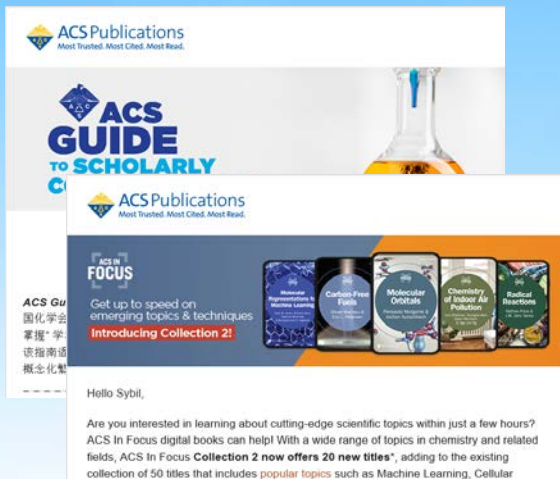
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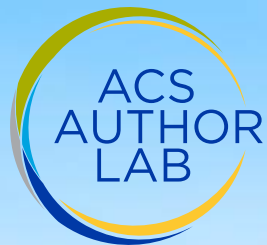
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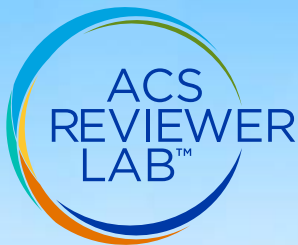
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题目3：ACS 收录多少本电子图书 eBooks？

- A. 1300 多本
- B. 1500 多本
- C. 1700 多本

答案：C

A. 1300 多本

B. 1500 多本

C. 1700 多本

题目4：ACS Guide 出版什么内容的学术资源？

- A. 学术交流指南
- B. 试剂标准手册
- C. 化学与工程新闻

答案：A

A. 学术交流指南

B. 试剂标准手册

C. 化学与工程新闻

题目5：ACS Reagent Chemicals 是哪一类资源？

- A. 学术交流指南
- B. 试剂标准手册
- C. 化学与工程新闻

答案：B

A. 学术交流指南

B. 试剂标准手册

C. 化学与工程新闻

关于我们

联系信息

ACS 产品培训主管: 赵璟

Tel: 13816222420

Email: rudy@igroup.com.cn

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