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**American Chemical Society**

# Supporting the Chemistry Community Through the Transition to Open Science

Presented by

**Sarah Tegen, Ph.D.**

Senior Vice President and Chief Publishing Officer

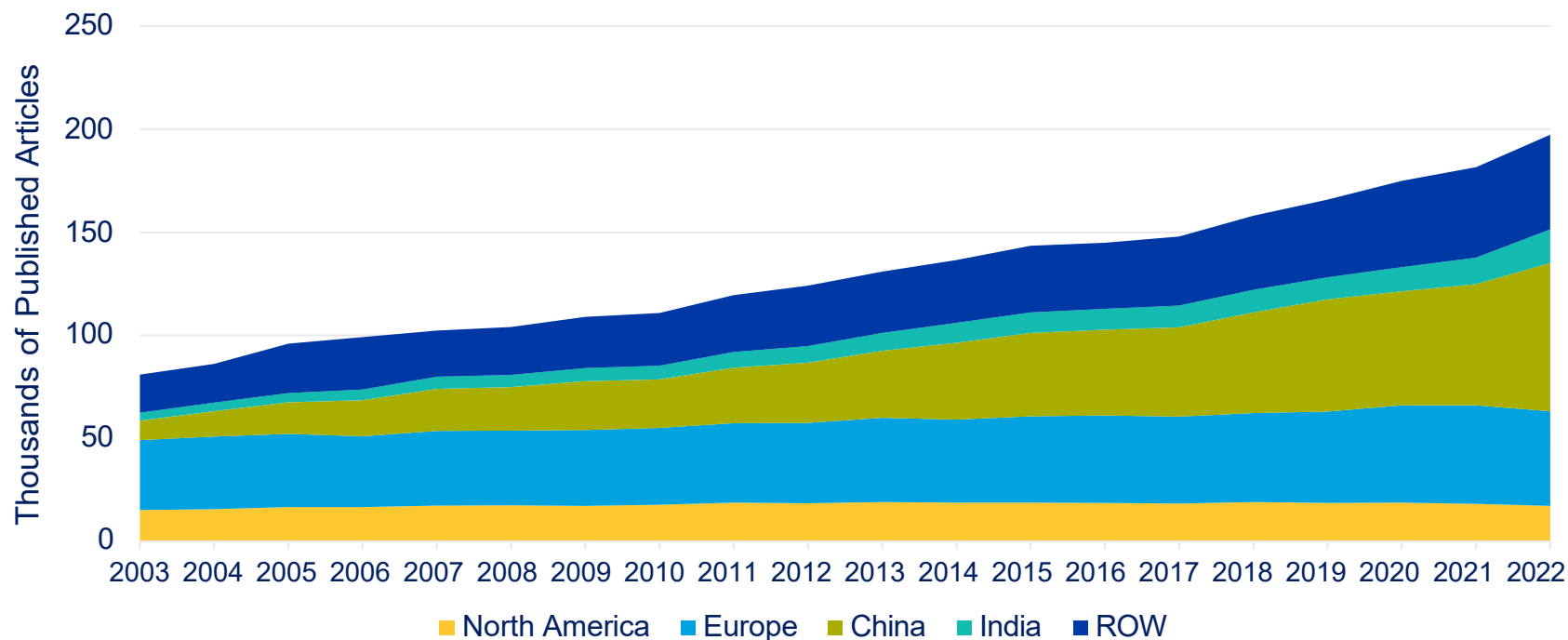
ACS Publications

Chemical Sciences Roundtable

February 21, 2024

# Chemistry Articles are Growing 5% p.a. Globally

Dominated by China; US/Europe Stagnant (and for many years)

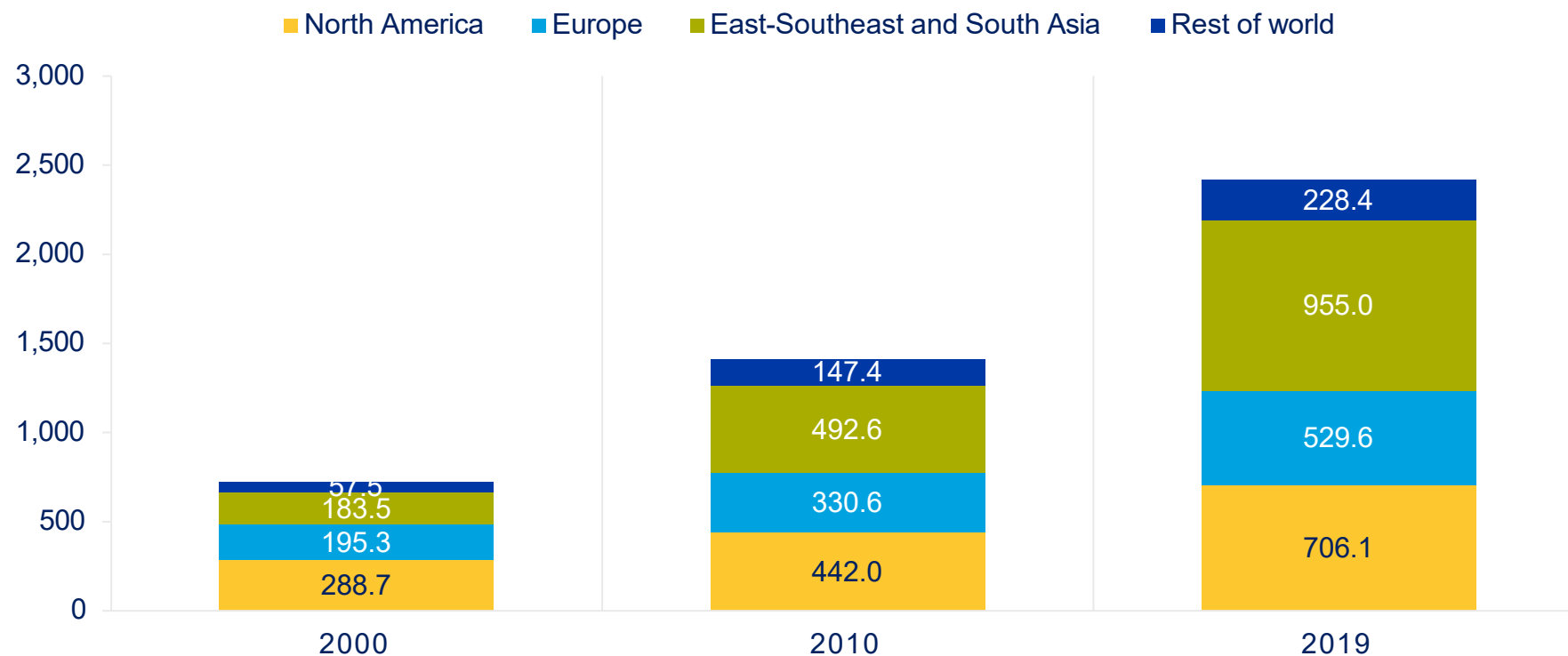


More than 1/3 of published chemistry content originated from China in 2022

National Center for Science and Engineering Statistics; Science-Metrix; Elsevier, Scopus abstract and citation database, accessed April 2023; World Bank Country and Lending Groups, accessed May 2023.

# Global R&D Funding

In Billions of USD



China ratcheting up basic research spend from 6% of R&D to 8% (2025 goal)

National Center for Science and Engineering Statistics, estimates as of December 2021. Based on data from Organisation for Economic Co-operation and Development, *Main Science and Technology Indicators* (September 2021 edition), and United Nations Educational, Scientific and Cultural Organization, Institute for Statistics, Science Technology and Innovation data set (March 2021 release). *Science and Engineering Indicators*

A female scientist with short dark hair, wearing a white lab coat over a light blue button-down shirt, is seated at a desk in a laboratory. She is looking down and writing in a notebook with a black pen. A black watch is visible on her left wrist. In the background, a microscope is visible on the left, and a window with a view of a city skyline is on the right. A white text box is overlaid on the left side of the image.

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# Committed to Integrity

Strong investment in people and infrastructure to help the research community



## Publication Ethics Desk

- COPE Members
- STM Integrity Hub
- Authorship issues; Conflict of Interests
- Guidance on best practices
- Provide language for editor use
- Manage and consult on ethics case

## Data Help Desk

- Research Data Alliance Members
- Endorsed the Joint Declaration of Data Citation Principles
- Image manipulation analysis
- Data duplication analysis
- Data Availability Statements
- Data related questions

# Committed to Enabling Research Data Sharing

Educate researchers about how to share data



## Research Data Policy Levels

All policy levels are subject to potential ethical and legal restrictions on the public release of data (see section below on [Exceptions](#)). Authors are advised to check the Author Guidelines for the journal to which they plan to submit for journal-specific data guidelines.

|                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Level 1</b><br>Public data availability encouraged                                                                    | The journal <b>encourages</b> all authors to publicly share all the data underlying the results reported in the paper, preferably via archiving in an appropriate public repository. Authors are <b>encouraged</b> to provide a <a href="#">Data Availability Statement</a> describing the public availability of the data supporting the article's conclusions. Publicly available data sets should be <a href="#">cited appropriately</a> .                                                                                           |
| <b>Level 2</b><br>Public data availability encouraged; Data Availability Statement required                              | The journal <b>encourages</b> all authors to publicly share all the data underlying the results reported in the paper, preferably via archiving in an appropriate public repository. Authors are <b>required</b> to provide a <a href="#">Data Availability Statement</a> describing the public availability of the data supporting the article's conclusions. Publicly available data sets should be <a href="#">cited appropriately</a> .                                                                                             |
| <b>Level 3</b><br>Public data availability required; Data Availability Statement required                                | The journal <b>requires</b> , as a condition of publication, all authors to publicly share all the data underlying the results reported in the paper, preferably via archiving in an appropriate public repository. Authors are <b>required</b> to provide a <a href="#">Data Availability Statement</a> describing the public availability of the data supporting the article's conclusions. Publicly available data sets should be <a href="#">cited appropriately</a> .                                                              |
| <b>Level 4</b><br>Public data availability required and data will be peer-reviewed; Data Availability Statement required | The journal <b>requires</b> , as a condition of publication, all authors to publicly share all the data underlying the results reported in the paper, preferably via archiving in an appropriate public repository. The data will undergo peer review along with the manuscript. Authors are <b>required</b> to provide a <a href="#">Data Availability Statement</a> describing the public availability of the data supporting the article's conclusions. Publicly available data sets should be <a href="#">cited appropriately</a> . |

[https://publish.acs.org/publish/data\\_policy](https://publish.acs.org/publish/data_policy)



**Level 1: All ACS journals encourage data sharing**



**Level 2: Some require a Data Availability Statement**

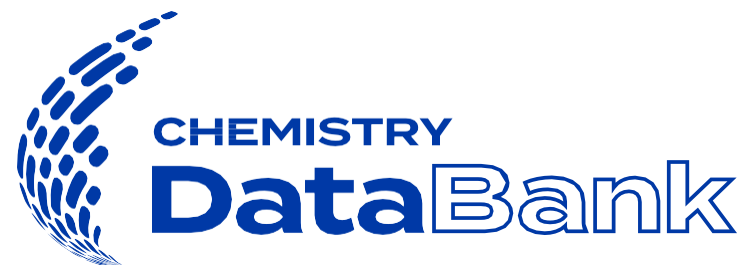


**Level 3: Some journals require certain types of data be shared publically (i.e. CIF data)**

To find an appropriate repository, authors may refer to [re3data.org](https://re3data.org) and [FAIRsharing.org](https://FAIRsharing.org) for information on available repositories, their certification status, and services offered.

# Committed to Enabling Research Data Sharing

Provide chemistry-specific tools



- Chemists will deposit digital data from analytical devices used during analysis and observation.
- DOIs are generated to enable search, discovery, and citation
- Provide clear guidance to authors on how to apply open science standards to their chemistry research to enable them to share their primary research data.
- Deliver high quality, practical primary research data sets to researchers as part of the supporting information in articles.



# Committed to Growing Open Access in Chemistry

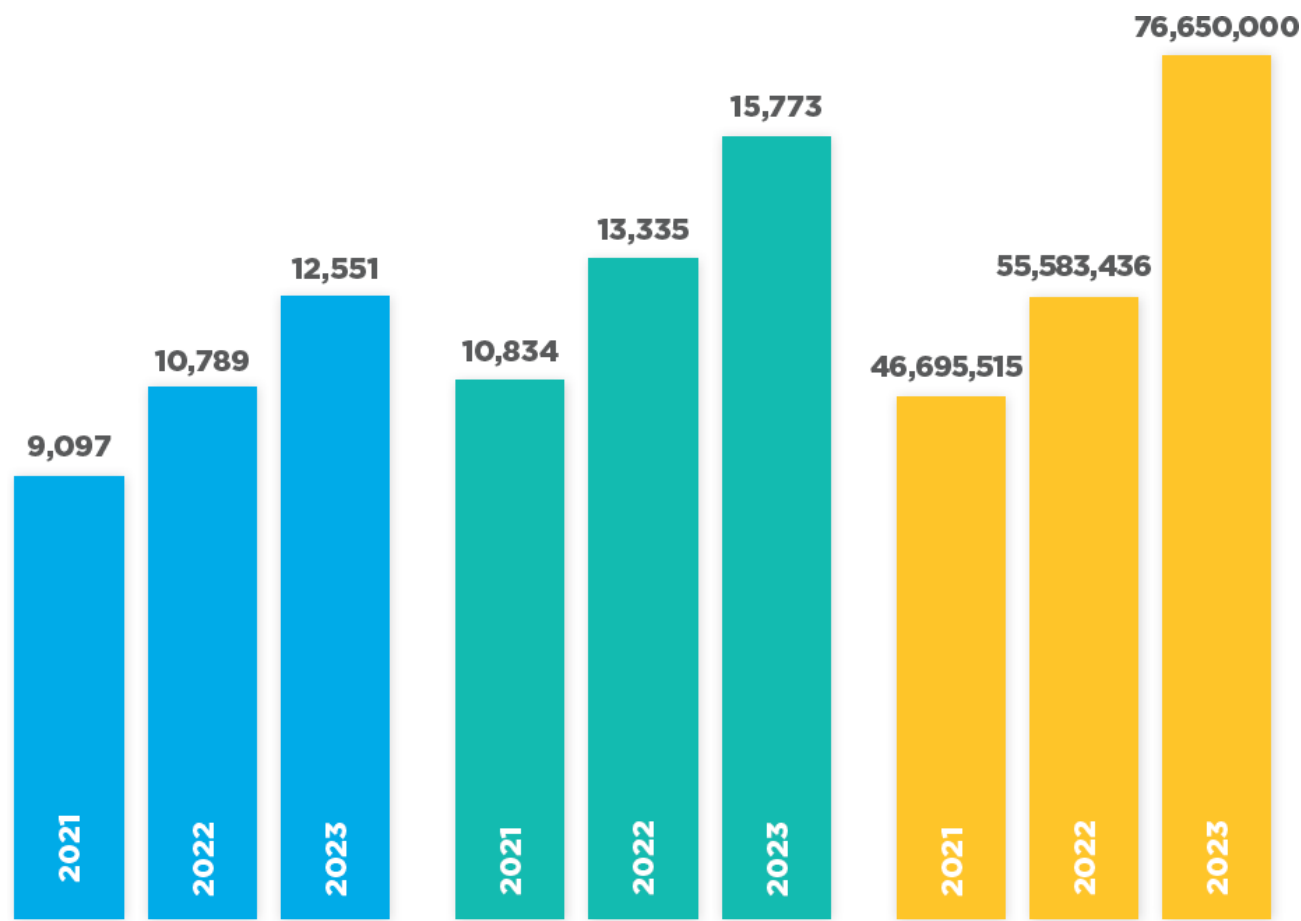
Open Access portfolio to meet the needs of all researchers





# Committed to Growing Open Access in Chemistry

High quality, rigorous peer review is our hallmark



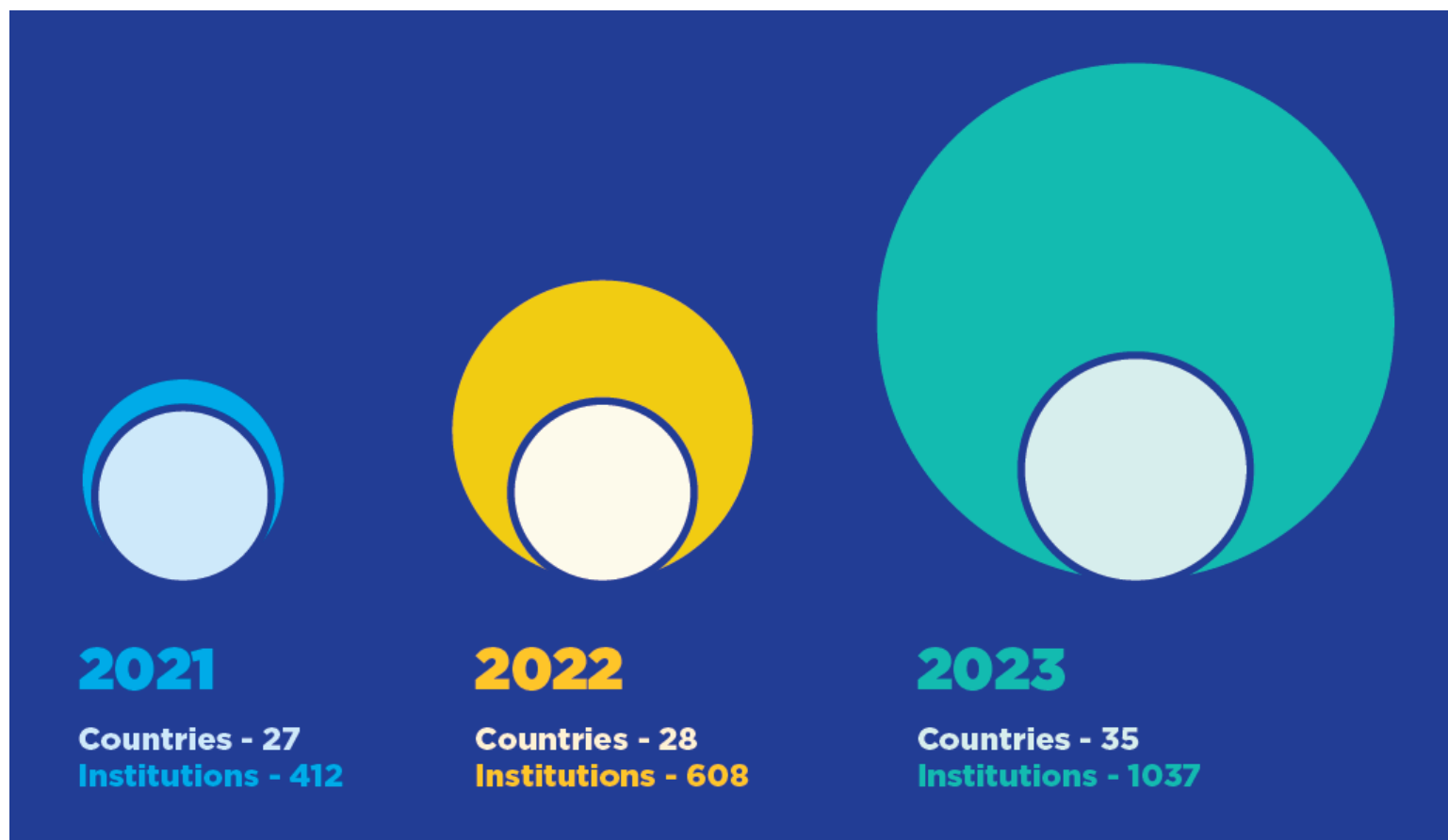
**38% Increase in authors**

**46% Increase in OA articles**

**64% Increase in usage**

# Committed to Growing Open Access in Chemistry

Rapidly increasing Read and Publish Agreements

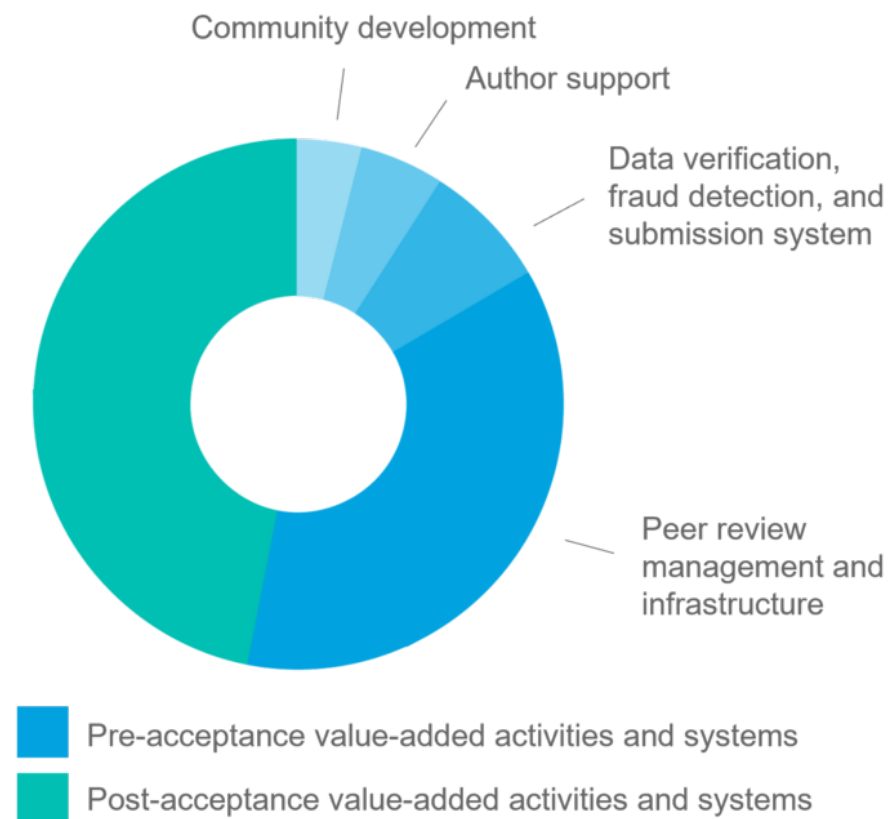


# Committed to Growing Open Access in Chemistry

Sustainably supporting authors to comply with zero-embargo green mandates

- The article development charge (ADC) is a flat fee of \$2,500 USD and is payable once the manuscript is sent for peer review.
- Covers the cost of ACS' pre-acceptance publishing services, from initial submission through to the final editorial decision.
- ADC waivers or discounts will be automatically applied
- Full open access of the Version of Record preferred (through read and publish agreements)

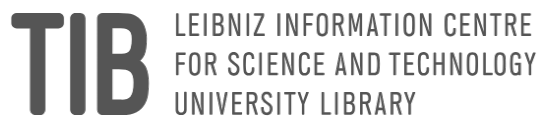
## Cost breakdown



# Committed to Growing Open Access in Chemistry

Joint Society commitment to preprints

## ChemRxiv™



Preprints Posted

Views and Downloads

11,195

2021

32,225,074

15,875

2022

41,372,743

21,531

2023

49,192,846



A female scientist with short dark hair, wearing a white lab coat over a light blue button-down shirt, is seated at a desk in a laboratory. She is looking down and writing in a notebook with a black pen. A black watch is visible on her left wrist. In the background, a microscope and other laboratory equipment are visible, slightly out of focus. A white text box is overlaid on the left side of the image.

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