



ROYAL SOCIETY
OF **CHEMISTRY**

Partnering the Chemical Science Community on the road to Open Science

Publishing in the Age of Open Science:
Workshop for Researchers, Institutions,
and Publishers.

Emma Wilson (RSC)

February 2024

Royal Society of Chemistry

Our **purpose** is to help the chemical science community **make the world a better place.**

Our **vision** is a world in which the chemical sciences fulfil their **potential as a force for good.**

Part of our **mission** is to provide the opportunities and **tools for the chemical science community to network, create and exchange knowledge, adapt and thrive.**



Royal Society of Chemistry: Publishing

ROYAL SOCIETY OF CHEMISTRY

Members' area | Support us

COVID-19 response | About us | Membership & professional community | Policy & perspectives | **Journals, books & databases** | Teaching & learning | News & events | Locations & contacts

Home > Journals, books & databases

Journals, books & databases

Our publishing portfolio contains over one million articles, chapters and records from across the chemical sciences and related fields

Read & search our journals

View our books

Databases

MarinLit
A comprehensive database of the marine natural products literature, covering new and revised structures, synthesis, ecology and biological activities. Features flexible searching and powerful dereplication tools based on predicted and experimental data.

The Merck Index* Online
For over 120 years, the most authoritative and reliable source of information on chemicals, drugs and biologicals. Now available online and fully searchable with over 11,500 monographs, including new and historical records not available in the print edition.

ChemSpider
A free database of over 50 million chemical structures, properties, and associated information. ChemSpider integrates data from hundreds of sources, and includes additional properties, related information, and links back to original data sources.

ChemComm | Chemical Science | Chem Soc Rev | Chemistry Education Research and Practice

CrystEngComm | Dalton Transactions | Digital Discovery | EES Catalysis

Environmental Science Nano | Environmental Science Processes & Impacts | Environmental Science Water Research & Technology | Faraday

Journal of Materials Chemistry A | Journal of Materials Chemistry B | Journal of Materials Chemistry C | Lab on a Chip

Advances in Chemistry Education Series | Biomaterials Science Series | Asymmetric Functionalisation of C-H Bonds | Chemical Biology Series

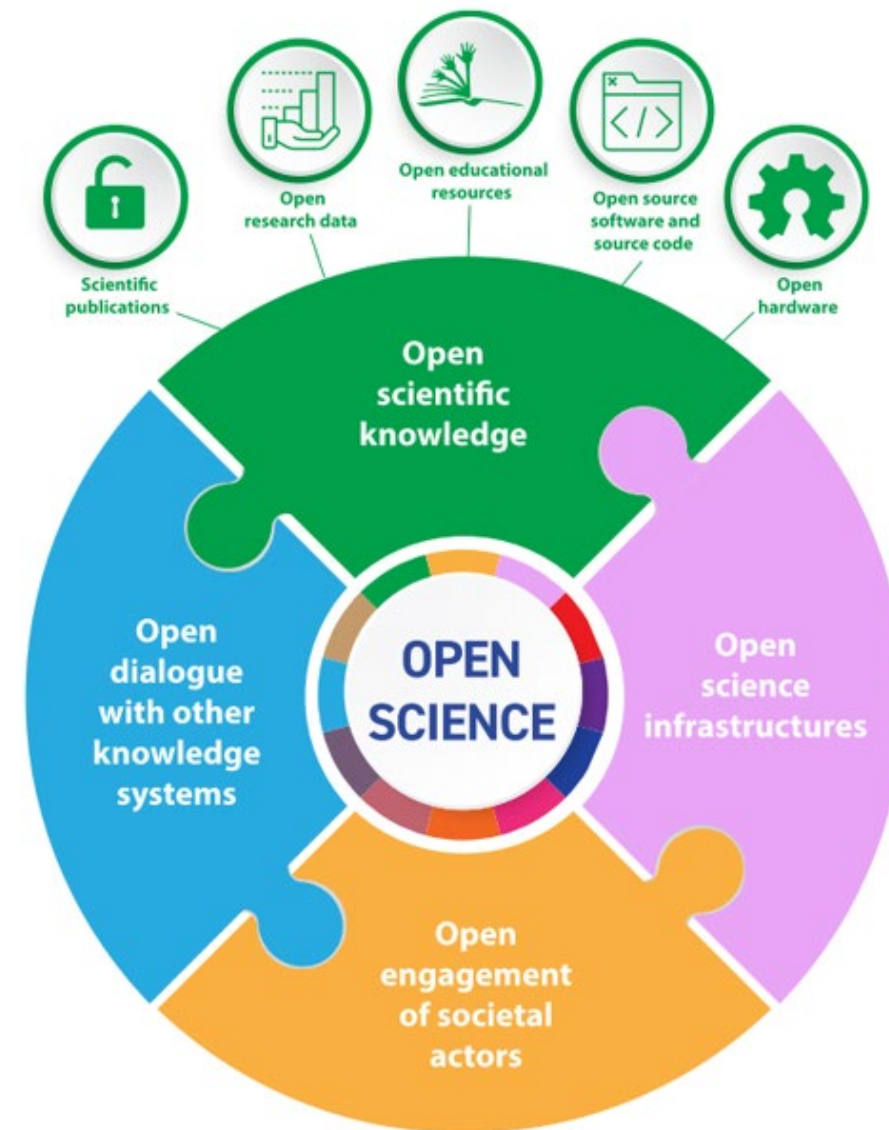
Comprehensive Series in Photochemical & Photobiological Sciences | Detection Science | Orphan Drugs and Rare Diseases | Energy and Environment Series

What is Open Science?

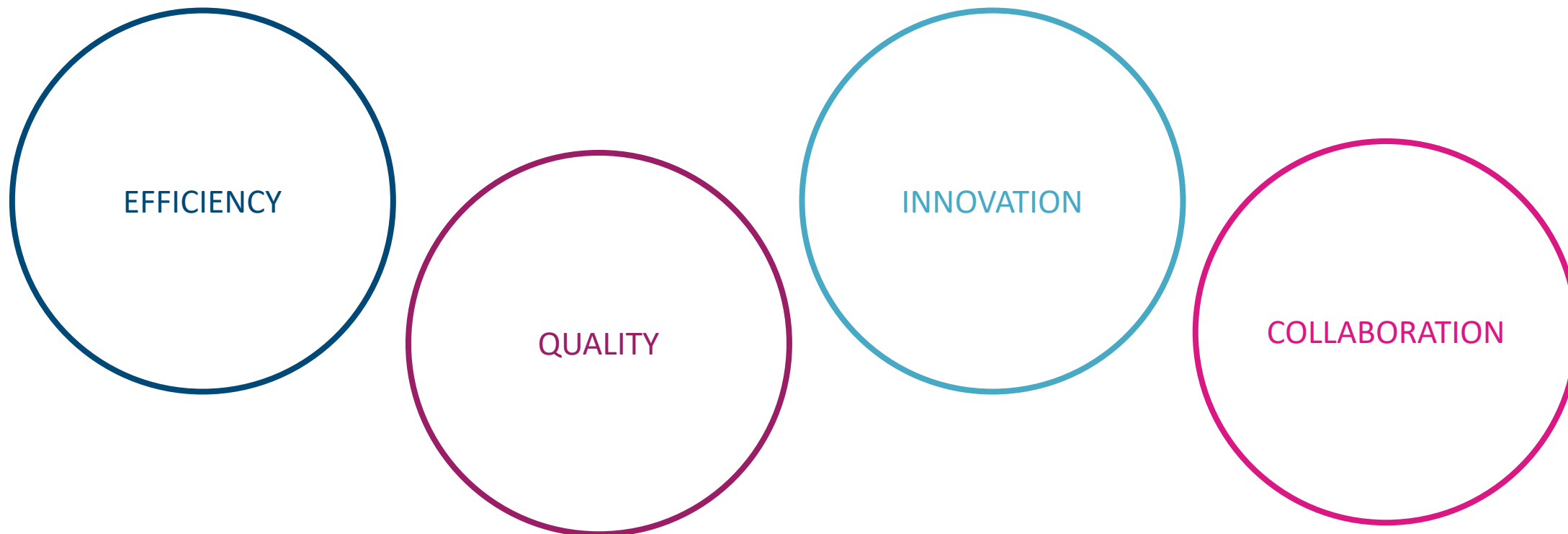
"scientific knowledge **openly available, accessible and reusable** for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society" – United Nations

"The principle and practice of making **research products and processes available to all**, while respecting diverse cultures, maintaining security and privacy, and **fostering collaborations, reproducibility, and equity.**" - U.S. Office of Science and Technology Policy and the National Science and Technology Council

"as open as possible, as closed as necessary."

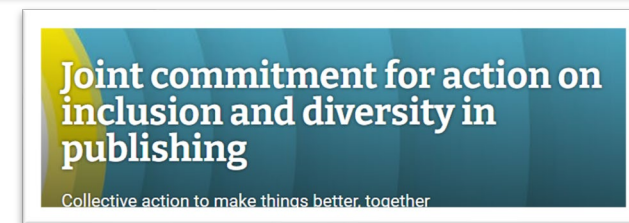
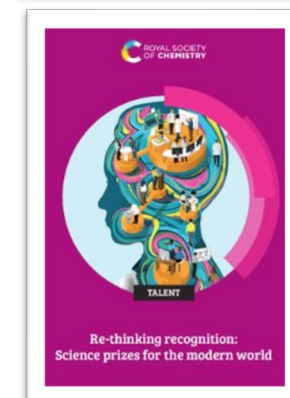


Why Open Science?



The role of Societies in Open Science

- **Mission driven** to advance our discipline
- **Uniquely** placed to work with our communities
- Work across many different aspects of **research culture and open science**
- Well placed to work with **wide range of stakeholders**



Open Science is Broad

What does it mean for the chemical sciences?

Where can we make the most impact?

At the RSC, we have made a commitment to Open Science and focus primarily on:

- Research Assessment & Culture
- **Open Scientific Publications (Open Access)**
- **Open Research Data**
- Open Peer Review

Our commitment to open science

Our purpose is to help the chemical science community make the world a better place; we envision a world in which the chemical sciences fulfil their potential as a force for good. We strive to work with our community to break down barriers to advancing the chemical sciences and to ensure appropriate equitable, global access to knowledge and data.

We believe that the best ways to enable chemical scientists to make the world a better place are through enabling greater access to knowledge, ensuring that tools and data are presented in a useful way, and that data is FAIR (Findable, Accessible, Interoperable, Reusable), that practices such as peer review are transparent, that research is carried out ethically and with integrity, that collaboration is encouraged and that ultimately more people are enabled and encouraged to participate in science.

As a group, these principles form the basis of the open science agenda – an agenda that is currently being defined by stakeholders from around the world. Our goal as a learned society, professional body, and publisher is to work with our community and stakeholders, including chemical science researchers across sectors, funders, and policymakers - to develop our vision for Open Chemistry. Together, we'll uncover barriers, assess motivations, pinpoint catalysts for change, and explore various pathways to an open future that best serves chemistry and society.

Our open science journey so far and our current initiatives

Open access →

Open access can lead us to a fairer society by making impactful research available to everyone. No matter who you are or where you live, you deserve to access and benefit from new discoveries.

Data sharing →

Discover why data sharing is important and why we believe that where possible, all data associated with the research in a manuscript should be Findable, Accessible, Interoperable and Reusable (FAIR).

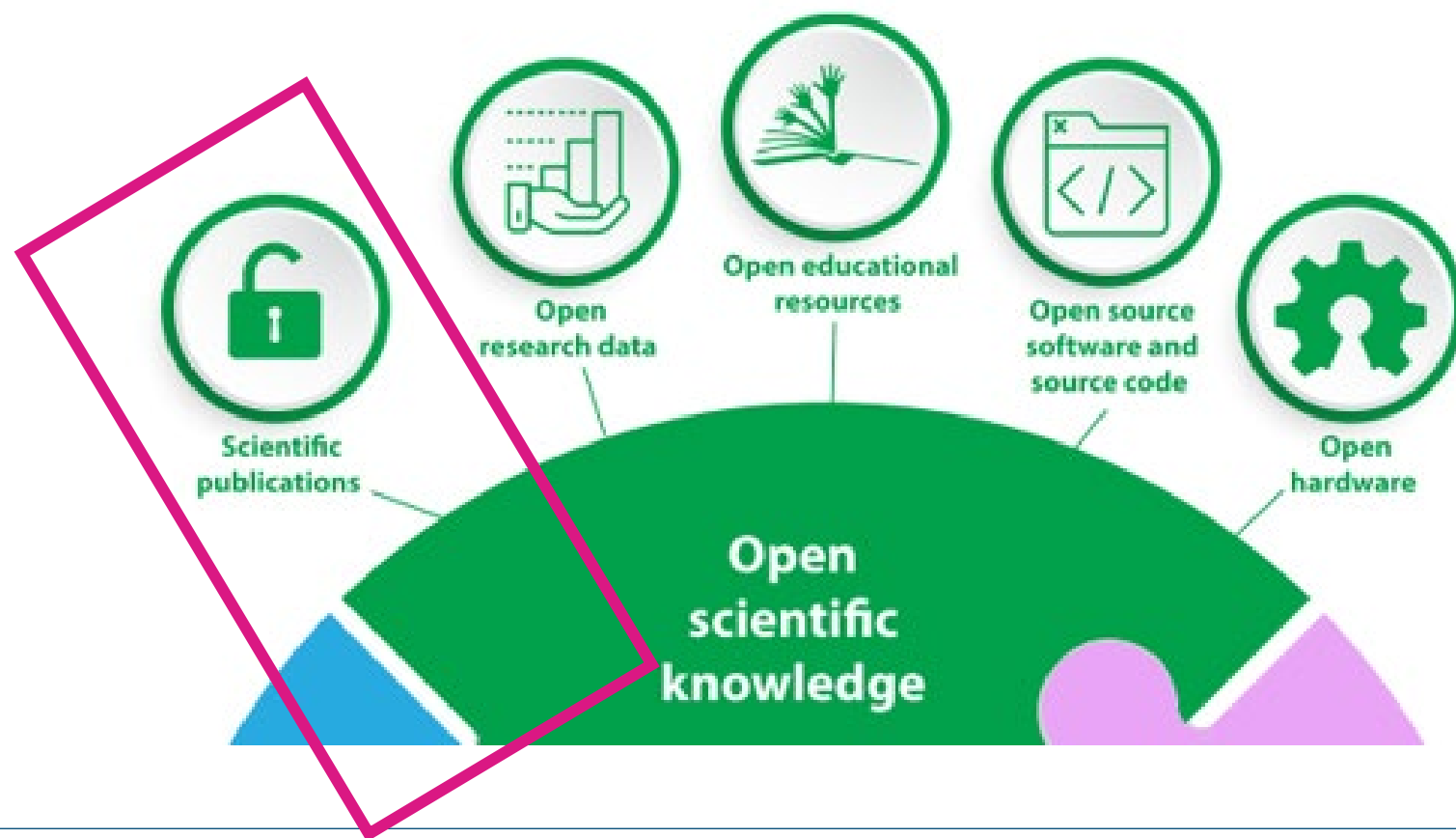
Inclusion and diversity →

Our goal is to increase the diversity of people choosing and fulfilling their potential in the chemical sciences to create a truly inclusive community. Learn more about our strategy, activities and resources.

Read full statement <https://www.rsc.org/journals-books-databases/open-science/>

Open Science & Open Access

Open Access to scientific publications is a **key component of Open Science**



Open Access is the future

- The **publishing landscape is moving further and further towards a fully Open Access environment**
- All cOAlition S and UKRI funded research now Open Access. **Plan S funding for 'Transformative Journals' and Transformative Agreements ends in 2024**
- **The US will require *immediate access* to federally funded research after it is published, starting in 2026**
- **Japan will require *immediate access* to research after it is published, starting in 2025**
- **Publishers are adapting and transitioning**
- The question is no longer *if* Open Access, but *when* (and *how*).

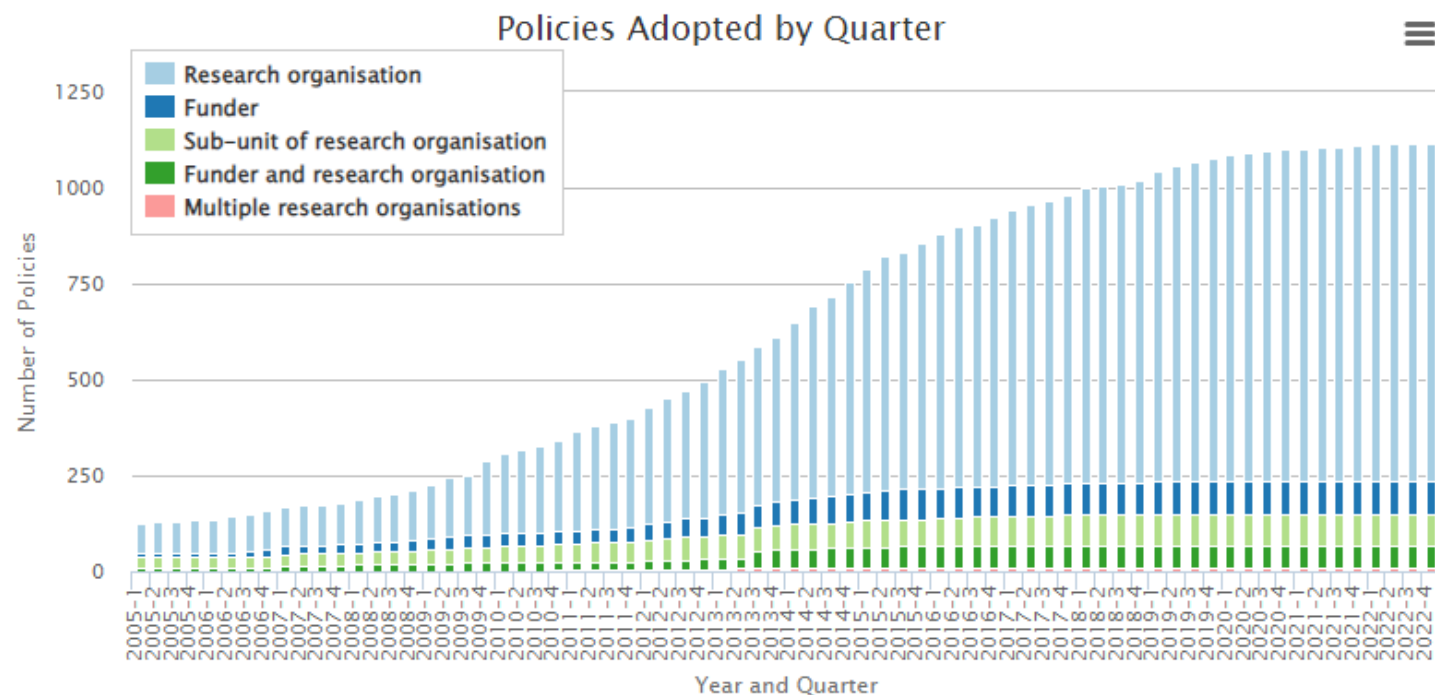
NEWS EXPLAINER | 08 April 2021 | Correction [12 April 2021](#)

A guide to Plan S: the open-access initiative shaking up science publishing

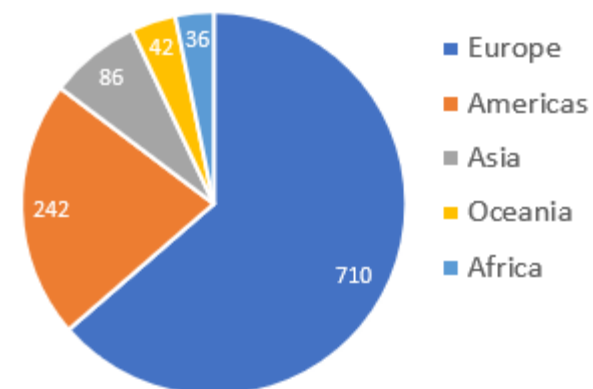
The push to remove journal paywalls officially started this year. Here's how it works.

[A guide to Plan S: the open-access initiative shaking up science publishing \(nature.com\)](#)

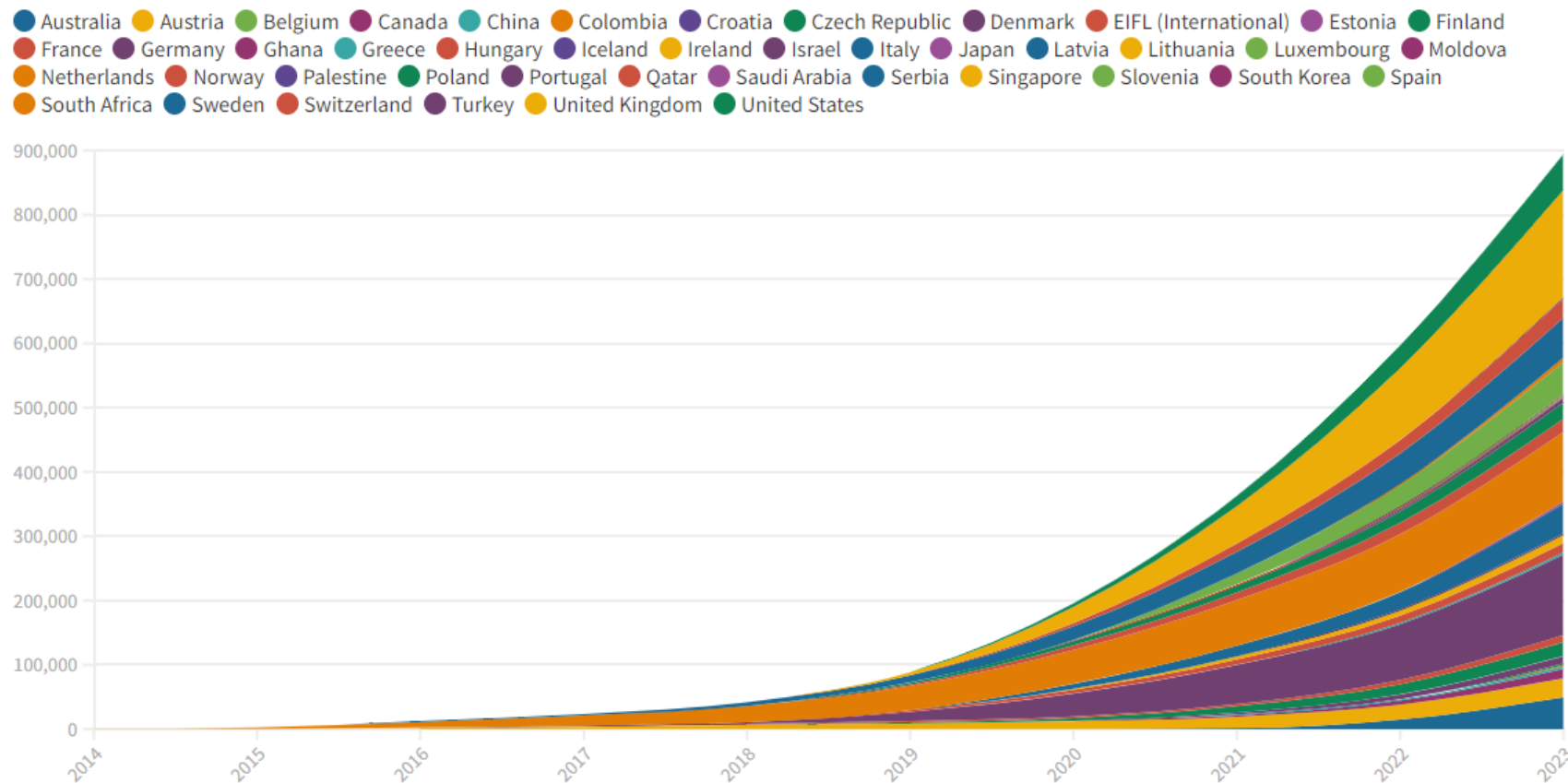
The Push for Open Access: a European Perspective



Number of policies by continent



The Rise & Success of Transformative Agreements



Source: [ESAC Transformative Agreement Registry](#) • Click on a country to filter. Last updated: 05-02-2024

Open Access at the RSC

Your path to open access

Read more about open access publishing, including diamond and gold open access, transformative journals and hybrid journals. You can also find information on Read & Publish and ChemRxiv.

Chemical Science

Gold open access

Hybrid and transformative journals

Read & Publish

ChemRxiv

Chemical Science-
our flagship
journal. Diamond
OA, free to read,
free to publish.
**Costs covered by
the RSC**

Dedicated
portfolio of **18
Gold OA
Journals**
(supported by
APC's - waived
for first 2 years
after launch)

Portfolio of 37 Journals, author
can choose to publish either
**Gold OA or behind a "read"
paywall** (subscription or
reading fee)

An agreement
where the
authors **institute
covers** their OA
publication fee &
a reading fee for
subscription
content

Share work
before
publication.
**Pre-print
server** for
the
chemical
sciences

RSC Read & Publish OA Agreements

- **A stepping stone** to Open Access
- Now have over **1,270 institutes** covered by OA Agreements in **37 countries**
- High uptake in **Europe**
- **Gaining traction** in the **US** (89 institutes)



How does our community choose to publish?

- In Europe, funder mandates and librarian support of OA agreements drives OA uptake
- OA Institutional deals popular with researchers
- US authors tend to publish OA in Gold OA journals (not hybrid)
- Chinese authors favour Gold OA Journals (not hybrid)

Country	% of articles published OA
Sweden	94
UK	91
The Netherlands	85
South Africa	66
Germany	61
US	36
Canada	28
India	25
China	14

Our vision of an Open Access future

The RSC has committed to achieving 100% Open Access by 2028.

Everyone, everywhere has the same potential to access critical knowledge and build upon it, **accelerating the pace of innovation and discovery**

Authors should not be paying for Open Access; libraries, governments and funders should reinvest subscription funds to cover these costs through new Open Access business models

A global understanding that **Open Access = quality, integrity and transparency**



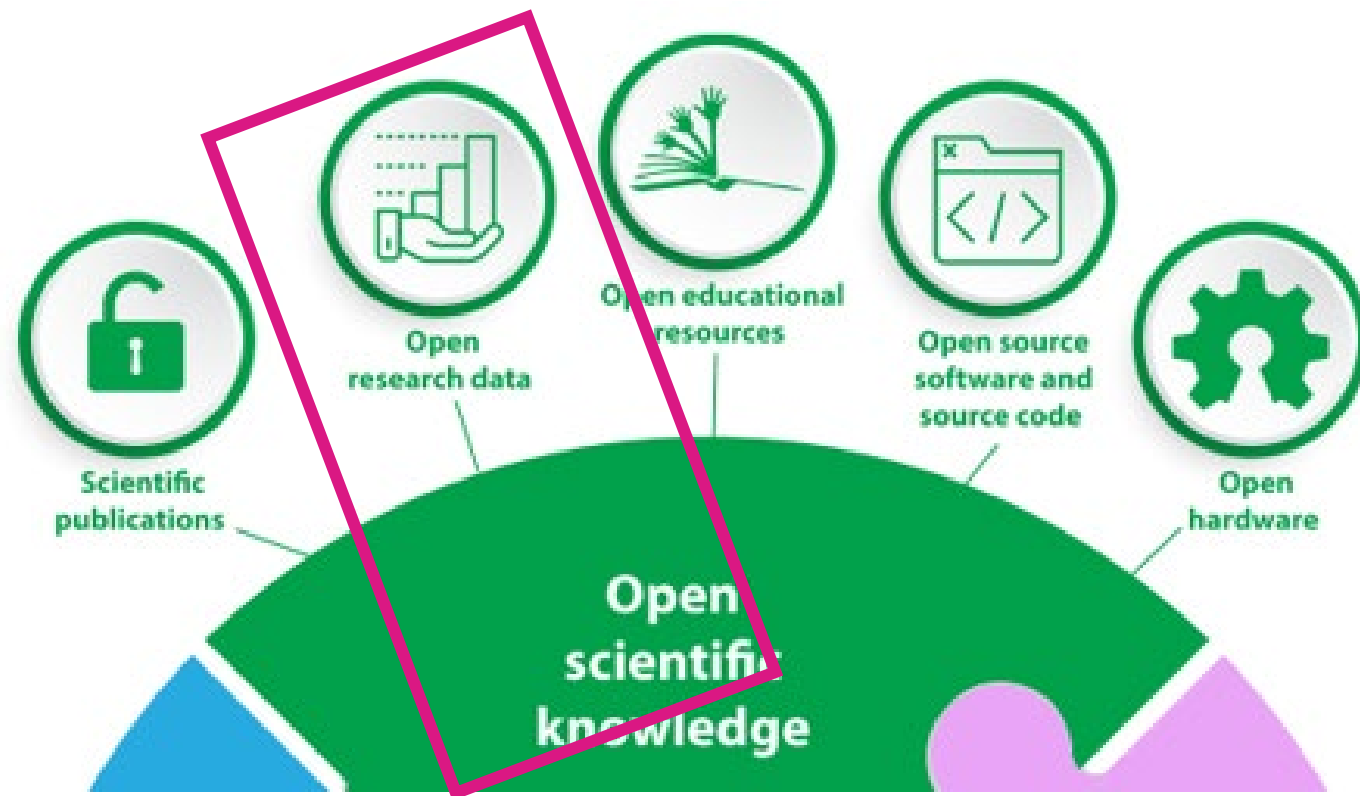
Co-developing an Open Access Future

- **New consortium model- RSC Platinum.** Four-year agreement supports authors and readers at **77 institutions** in Germany.
- **An agreement designed to support a fully OA future,** which delivers shared goals of equity for German institutions and a **community approach**
- **3 components to the agreement**
 - Base fee – flat rate (for all members, covers publishing services)
 - Publishing component (variable) applies only to institutes that publish (not APC based)
 - Discounts (variable) the more institutes that participate the better the rate.



[Royal Society of Chemistry and TIB co-create next generation Open Access consortium model \(rsc.org\)](https://www.rsc.org)

Open Science & Open Data



Open Research Data

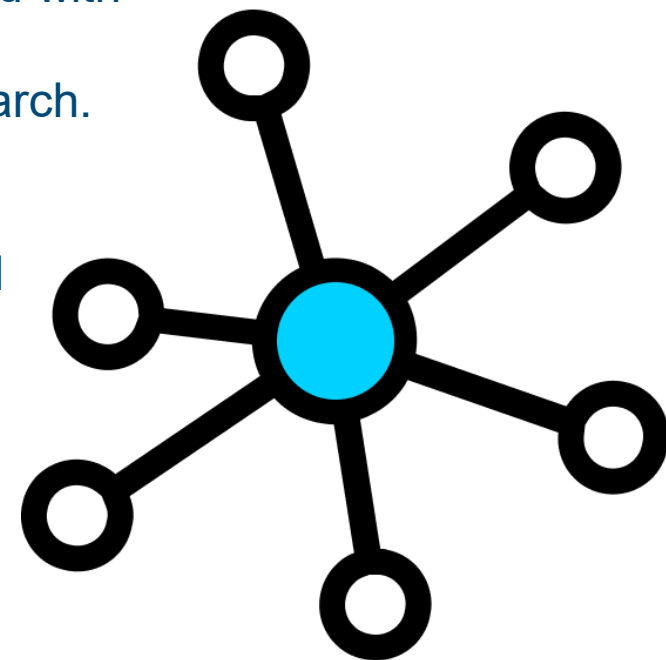
The Royal Society of Chemistry believes that where possible, all data associated with the research in a manuscript should be Findable, Accessible, Interoperable and Reusable (FAIR), enabling other researchers to replicate and build on that research.

What are the challenges for the chemical sciences?

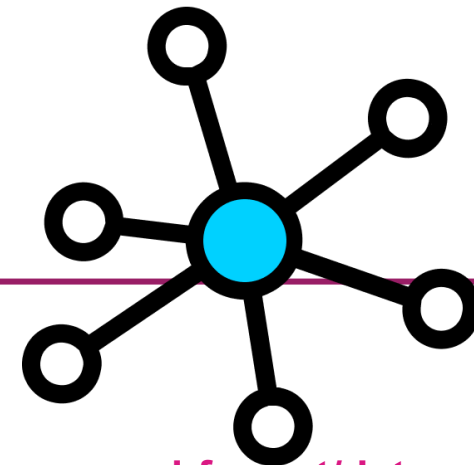
- Transitioning from Supporting Information (often a mix of processed data and commentary) to data publication and citation
- Standards, instrumentation and infrastructure to generate and store FAIRly
- Making it easy, and rewarding, for the researcher

What's going on?

- Exemplars all can recognise – crystallography
- Standards development e.g. IUPAC, and the WorldFAIR Chemistry project
- Infrastructure, standards, workflows, e.g. NFDI4Chem project (German), PSDI (UK)



Open Research Data



What is the RSC doing as a publisher?

We provide recommendation and guidance on Data Sharing on our website:

www.rsc.org/journals-books-databases/author-and-reviewer-hub/authors-information/prepare-and-format/data-sharing

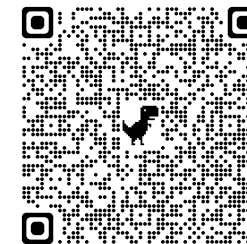
We **strongly encourage authors to deposit the data underpinning their research** in appropriate repositories and to formally cite associated datasets as bibliographic references. ChemSpider is a free chemical structure platform connecting compounds with related resources.

Data Availability Statements are recommended on all of our journals and are **required on Digital Discovery (DD)** with wider rollouts planned to encourage better data sharing. DD also has reviewers for data that is submitted linked to manuscripts.

Working with the community to support the development of open standards, and linking the value to data to what supports and validates the published research. It's a whole-community (and cross-discipline) journey.

Data sharing in RSC journals

We provide recommendation and guidance on data sharing on our website:



 [RSC data policies](#)

Our data sharing policy

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We strongly encourage authors to deposit the data underpinning their research in appropriate repositories.

For all submissions to Royal Society of Chemistry journals, any data required to understand and verify the research in an article must be made available on submission.

To comply, we suggest authors deposit their data in an appropriate [repository](#). Where this isn't possible, we ask authors to include the data as part of the article Electronic Supplementary Information (ESI).

Some journals may have additional subject requirements for both sharing and/or publishing supporting data, so please ensure you check the [journal specific guidelines](#).

Follow FAIR guidance

Deposit data where possible

Data supporting the reported findings must be shared at submission

Choose repositories over SI

Look out for journal-specific guidance

Digital Discovery Data availability and reproducibility

Accessibility of data and code is absolutely essential for the reproducibility of computational research.

- DAS required
- authors strongly encouraged to deposit as much data and code
- data and code must be made available for Editors and Reviewers at the time of peer review
- Within the reviewing process a specific data referee who checks the data and code and their usability.



Thank you!

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