



Extending the repository metadata set with contract and payment details

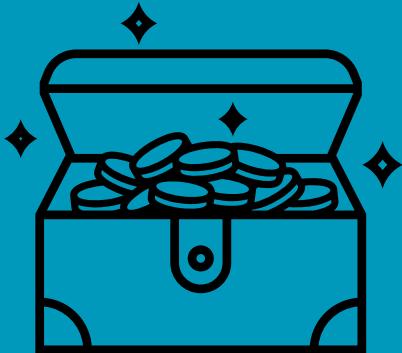
Leading the Way: How libraries are shaping the future of repository services

04/June/2025

Gernot Deinzer (University Library of Regensburg)



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 - Display of OpenAPC information in the Electronic Journals Library

The project openCost

- **Project partners:** University Library of Regensburg, Bielefeld University Library, Deutsches Elektronen-Synchrotron DESY Hamburg
- Funded by the German Research Foundation (DFG)
- **Goals:**
 - Creating a technical infrastructure that allows to comprehensively record all publication costs and subsequently make them freely accessible by means of standardized interfaces
 - Enabling cost transparency on an institutional, national, and international level

Project focus

- Development of a **standardized metadata schema** for the collection/recording and transfer of data on publication costs
- Implementation of an open interface for **harvesting** and querying this data
- Extension of the **Electronic Journals Library** (EZB) with special functions for displaying information on open access publication costs and on the assumption of costs

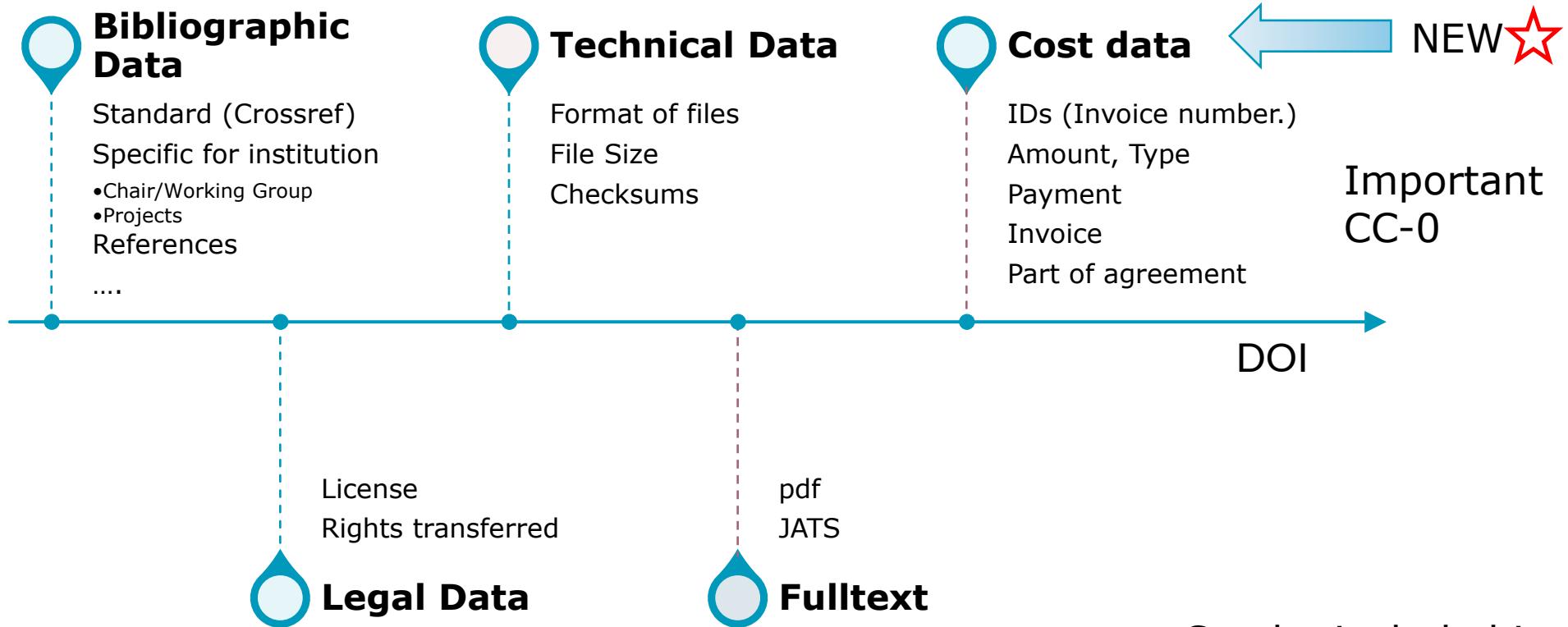


Metadata of publication

Extending the metadata of a publication with costs associated for publishing



Metadata of publication



Can be included in
other metadata
schemas like Datacite

Repositories

Achievement of transparency in the transformation process to open access



Repositories

- Repositories as designated location for sustainable publication of research results
 - Parallel publication of Gold Open Access Publications
- Further: Source of excellent metadata
 - Metadata is automatically gathered from various sources:
Crossref, DataCite, OpenAlex
- Enrichment with local requirements to obtain additional value
 - institutions, chairs, and local identifiers to obtain additional value
- Funding of research: funder and project number
 - provision of financial information, no exact figures

Where to store data on publication costs?

- Metadata of a publication that is stored in a repository:
 - **Bibliographic metadata:** all data describing the publication
 - **Technical metadata:** technical information and data about the publication
 - **Legal metadata:** mainly rights that are assigned to the publication
 - **Administrative metadata:** all relationships between a publication to an organization
- Metadata in library or management systems:
 - Cost data, but no information about the publication
 - Difficult to expand
 - Transformative agreements: publications have to be assigned to single payments

Cost data in repositories

Advantages:

- Open System
- Free combination of metadata
- Enabling statistical analyses
- Budget planning for libraries: Publication costs
- Standardized interfaces (OAI-PMH and APIs) for easy and automated data exchange



Article Processing Charges

Funded by Deutsche Forschungsgemeinschaft (DFG) – Project Number 457354095



Article with payment: Metadata schema and open data exchange

- The metadata schema:
 - Development in collaboration with experts and stakeholders
 - Community feedback (public GitHub repository)
 - Coverage of fee-based journal articles, additional costs, processing fees, costs from contracts, ...
- Open format for the exchange of cost data:
 - Exchange via über OAI-PMH-interface, XML as exchange format
 - Attribute-less XML for easy export in other formats (e.g. JSON)

```
publication
  --- primary_identifier
    |   --- doi _OR_ bibliographic_information!*
  --- secondary_identifiers
    |   --- id type=doi
    |   --- id type=local
    |   --- id type=oai
  --- institution
    |   --- id type=ror
    |   --- name type=short
  --- publication_type = COAR controlled vocabulary
  --- external_costsplitting = true _OR_ 1 / false _OR_ 0
  --- cost_data
    |   --- part_of_contract
      |     --- primary_identifier
        |       --- id type=ESAC
      |     --- group_id
    |   --- invoice
      |     --- invoice_number
      |     --- creditor
      |     --- dates
        |       --- invoice
        |       --- paid
      |     --- amount_invoice
        |       --- amount
        |       --- currency
    |   --- amounts_paid
      |     --- amount_paid
```



Article part of Agreement

Articles of transformative agreements, community
modells, diamond open access



Articles part of a publishing agreement

Consortium SCOAP³

Mentioned in copyright

Published by the American Physical Society under the terms of the Creative Commons Attribution 4.0 International license.

Further distribution of this work must maintain attribution to the author(s) and the published article's title, journal citation, and DOI. Funded by SCOAP 3

DEAL (German Transformative Agreement with Springer Nature, Wiley, Elsevier)

Mentioned in Acknowledgement - Funding

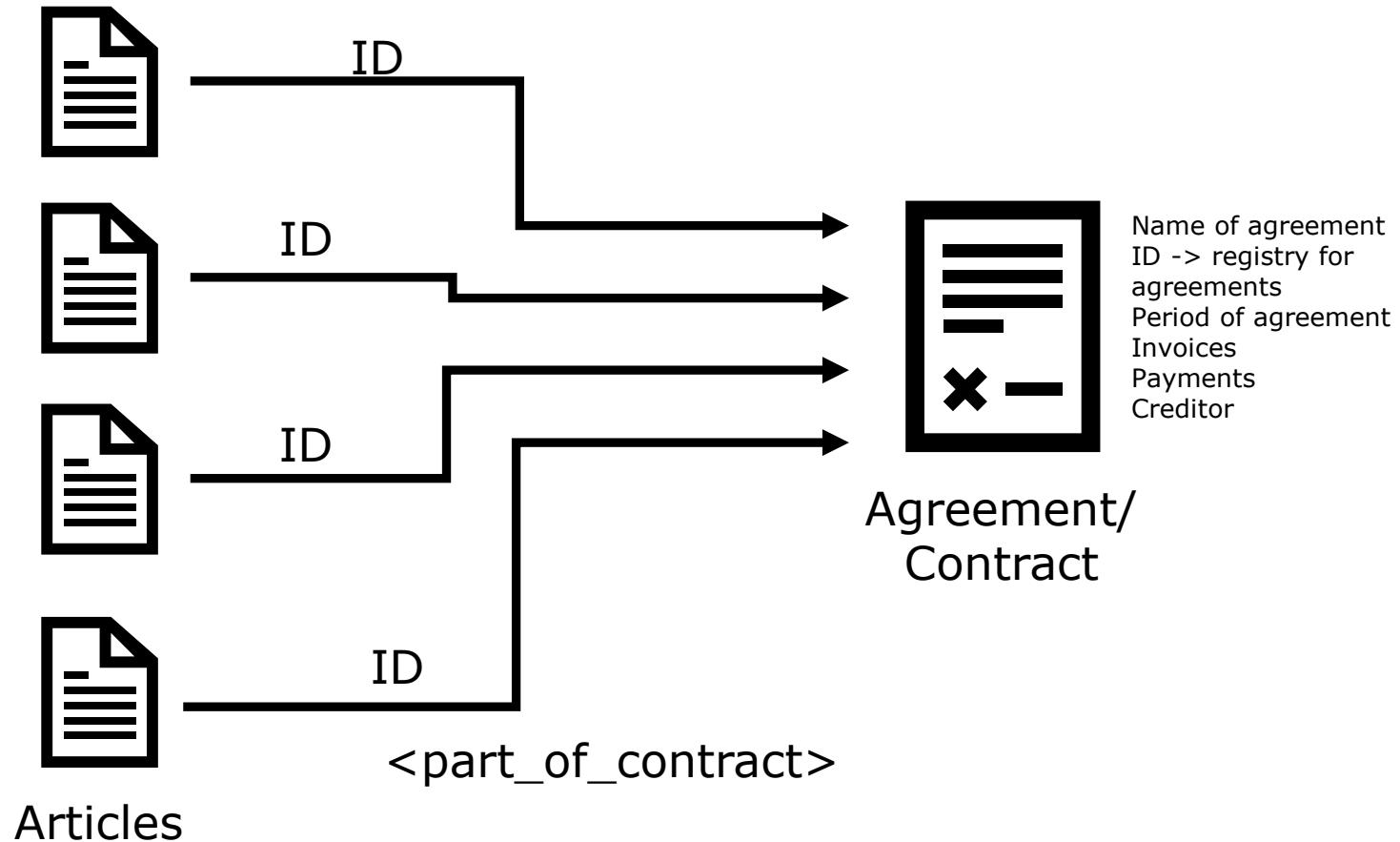
Open Access funding enabled and organized by Projekt DEAL.

Others: No mention at all

???

New Entity: Contract

Reference in Article Metadata to Contract



Contract entity

```
<contract>
  <contract_name>DEAL</contract_name>
  <institution>...</institution>
  <invoice_group>...
    <payment>...</payment>
  </invoice_group>
</contract>
```

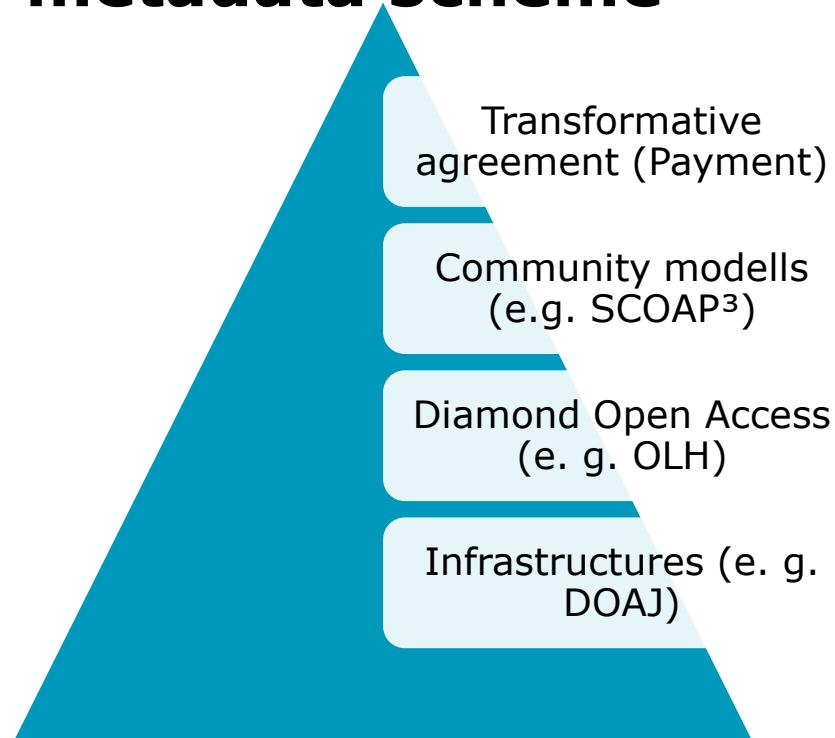
```
contract: {
  contract_name: DEAL,
  institution: {...},
  invoice_group: {...}
  payment: {...}
}
```

Machine Readable Data

Exchange of data possible via

- OAI-PMH
- API

Flexibility of metadata scheme



See Transparency to Sustain Open Science Infrastructure, <https://tsosi.org/>



Important:
Just real payments
No evaluation of the contract (like cost per article)

Integrating cost data into repositories

Exemplary implementation by the project partners



Display of OpenAPC information in repositories

Quantification of gas-accessible microporosity in metal-organic framework glasses

Frentzel-Beyme, L. ; Kolodzieski, P. ; Weiss, J.-B. ; Schneemann, A. ; Henke, S. (Corresponding author)

2022

Nature Publishing Group UK [London]

Nature Communications 13(1), 7750 (2022) [10.1038/s41467-022-35372-5]    

This record is in other databases:    

Please use a persistent id in citations: doi:10.1038/s41467-022-35372-5 doi:10.3204/PUBDB-2022-07789

Abstract: Metal-organic framework (MOF) glasses are a new class of glass materials with immense potential for applications ranging from gas separation to optics and solid electrolytes. Due to the inherent difficulty to determine the atomic structure of amorphous glasses, the intrinsic structural porosity of MOF glasses is only poorly understood. Here, we investigate the porosity features (pore size and pore limiting diameter) of a series of prototypical MOF glass formers from the family of zeolitic imidazole frameworks (ZIFs) and their corresponding glasses. CO₂ sorption at 195 K allows quantifying the microporosity of these materials in their crystalline and glassy states, also providing excess to the micropore volume and the apparent density of the ZIF glasses. Additional hydrocarbon sorption data together with X-ray total scattering experiments prove that the porosity features of the ZIF glasses depend on the types of organic linkers. This allows formulating design principles for a targeted tuning of the intrinsic microporosity of MOF glasses. These principles are counterintuitive and contrary to those established for crystalline MOFs but show similarities to strategies previously developed for porous polymers.

Classification:

- ddc:500

Contributing Institute(s):

1. DOOR-User (DOOR ; HAS-User)

Research Program(s):

1. 6G3 - PETRA III (DESY) (POF4-6G3) (POF4-6G3)

Publication costs of 5579.37€ funded by Technische Universität Dortmund (Source: OpenAPC)

Tumour stage distribution and survival of malignant melanoma in Germany 2002–2011

URN zum Zitieren dieses Dokuments:

URN: NBN:DE: BVB:355-EPUB-427213 

DOI zum Zitieren dieses Dokuments:

10.5283/EPUB.42721 

Schoffer, Olaf ; Schülein, Stefanie ; Arand, Gerlinde ; Arnholdt, Hans ; Baaske, Dieter ; Bargou, Ralf C. ; Becker, Nikolaus ; Beckmann, Matthias W. ; Bodack, Yves ; Böhme, Beatrix ; Bozkurt, Tayfun ; Breitsprecher, Regine ; Buchali, Andre ; Burger, Elke ; Burger, Ulrike ; Dommissch, Klaus ; Elsner, Gudrun ; Fernschild, Karin ; Flintzer, Ulrike ; Funke, Uwe ; Gerken, Michael ; Göbel, Hubert ; Grobe, Norbert ; Gumpf, Vera ; Heinzerling, Lucie ; Kemper, Lana Raffaela ; Kiani, Alexander ; Klinkhammer-Schalke, Monika ; Klöcking, Sabine ; Kreibich, Ute ; Knabner, Katrin ; Kuhn, Peter ; Lutze, Stine ; Mäder, Uwe ; Maisel, Tanja ; Maschke, Jan ; Middeke, Martin ; Neubauer, Andreas ; Niedostatek, Antje ; Opazo-Saez, Anabelle ; Peters, Christoph ; Schell, Beatrice ; Schenckirs, Gerhard ; Schmalenberg, Harald ; Schmidt, Peter ; Schneider, Constanze ; Schubotz, Birgit ; Seide, Anika ; Strecker, Paul ; Taubenheim, Sabine ; Wackes, Matthias ; Weiβ, Steffen ; Welke, Claudia ; Werner, Carmen  ; Wittekind, Christian ; Wulff, Jörg ; Zettl, Heike ; Klug, Stefanie J.  

Lizenz: [Creative Commons Namensnennung 4.0 International](#)
 PDF – Veröffentlichte Version
 [▲ \(976kB\)](#)

Veröffentlichungsdatum dieses Volltextes: 17 Mrz 2020 11:47

Alternative Links zum Volltext:  

Details

Details

Dokumentenart: Artikel

Höhe Gebühr (aus OpenAPC): 1661.24

Institution der Zahlung: TU Muenchen

Titel eines Journals oder einer Zeitschrift: BMC Cancer

Verlag: BMC

PUB – Publikationen an der Universität Bielefeld

Expertise-dependent perceptual performance in chess tasks with varying complexity

Küchelmann, T. ; Velentzas, K. ; Essig, K. ; Koester, D. ; Schack, T. (2022)
Frontiers in Psychology 13: 1-13.

Zeitschriftenaufsatz | Veröffentlicht | Englisch

Download:  [fpzyg-13-986787.pdf](#) 933.51 KB
 DOI: <https://doi.org/10.3389/fpsyg.2022.986787>
 URN: [urn:nbn:de:0070-pub-29668840](#)

Details Dateien

Autor*in: Küchelmann, Thomas  ; Velentzas, Konstantinos ; Essig, Karin  ; Koester, Dirk  ; Schack, Thomas 

Einrichtung:

Center of Excellence - Cognitive Interaction Technology CITEC
 Fakultät für Psychologie und Sportwissenschaft > Abteilung
 Sportwissenschaft > Arbeitsbereich II - Neurokognition und Bewegung -
 Biomechanik

Abstract / Bemerkung:

Perceptual performance, anticipating opponents' strategies, and judging chess positions especially in subliminal processing is related to expertise level and dependent on chunking processes. It becomes obvious that chess expertise is a multidimensional phenomenon related predominantly to



English 

Export
 Markieren/ Markierung löschen
 Markierte Publikationen
 Open Data PUB

Finanzierung

Quelle: OPENAPC
 Publikationskosten von 3401€
 finanziert durch Bielefeld University.

OAI-Interface for cost data



```
<opencost:data>
  <opencost:publication>
    <opencost:institution>
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        <opencost:value>https://ror.org/01eezs655</opencost:value>
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      </opencost:id>
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    <opencost:primary_identifier>
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    </opencost:primary_identifier>
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</opencost:publication>
</opencost:data>
```

<https://epub.uni-regensburg.de/cgi/oai2?verb=ListRecords&metadataPrefix=openCost&set=openCost>

Examples: agreements



Universität Regensburg

EN DE Search the Publication Server FIND

CONTACT LEGAL NOTICE PRIVACY

HOMEPAGE UR



UR HOME

PUBLICATION SERVER
UNIVERSITY LIBRARY
OPEN ACCESS POLICY
ELECTRONIC PUBLISHING
EN ACCESS PUBLISHING
POLICY

Quality Criteria
Open Access Journals
OpenAPC
Statistics
SEARCH

Publikations
Projects
HELP

ed in as
Dr. Gernot Deinzer
in as Dr. Gernot

Manage deposits
Grants (backfill)
Manage records

Profile
ORCID
Saved searches
Review
Reports
Admin

¹⁹F NMR Untersuchung des Konformationsaustauschs mehrerer Zustände im synthetischen Neomycin-bindenden Riboschalter

URN to cite this document:

URN:NBN:DE:BV:355-EPUB-584519



DOI to cite this document:

10.5283/EPUB.58451



Overbeck, Jan H. , Vögele, Jennifer ; Nussbaumer, Felix ; Duchardt-Ferner, Elke ; Kreutz,

Christoph ; Wöhnt, Jens ; Sprangers, Remco  

License: Creative Commons Attribution 4.0

PDF - Published Version
 (2MB)

Date of publication of this fulltext: 18 Jun 2024 09:42

Alternative links to fulltext: DOI Publisher

This publication is part of the DEAL contract with Wiley.

Details

Preview

Export bibliographical data

Abstract

Der synthetische Neomycin-bindende Riboschalter interagiert mit seinem Liganden Neomycin sowie mit den verwandten Antibiotika Ribostamycin und Paromomycin. Die Bindung dieser Aminoglykoside induziert sehr ähnliche Grundzustandsstrukturen in der DNA. Allerdings kann nur Neomycin die Initiation der Transkription effizient unterstützen.

University Library

Publication Server



Publishing: oa@ur.de
0941 943-4239 or -69394

Dissertations:
dissertationen@ur.de
0941 943-3904

Research data:
datahub@ur.de
0941 943-5707

Contact persons



Universität Regensburg

EN DE Search the Publication Server FIND

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HOMEPAGE UR

Wiley (1 January 2019 - 31 December 2023)

Information

Essential: The "responsible corresponding author" must be a member of the University of Regensburg!
hybrid: terms and conditions for free OA option:

- Articles accepted in 2019-2022
- Article types: "primary research articles" and "review articles" (not "editorial pieces" such as "letters" or "book reviews")
- No acceptance of color/page charges etc.

Gold OA: Discount of 20% on the APCs

For more information
Information page on DEAL
Open Access Agreement with Germany (Wiley Verlag)
DEAL agreement with Springer

Contract period

1 January 2019 - 31 December 2023

Invoices

Number	Creditor	From	To	Amount	Currency
R-2019-00028	MPDL Services GmbH	1 January 2019	31 December 2019	305648	EUR
R-2019-00480-C	MPDL Services GmbH	1 January 2019	December 2019	16275.2	EUR
R-2020-00682-B	MPDL Services GmbH	1 January 2020	31 December 2020	291281	EUR
W-2021-00091-A	MPDL Services GmbH	1 January 2021	31 December 2021	302651	EUR
W-2022-00119-A	MPDL Services GmbH	1 January 2022	31 December 2022	302651	EUR
W-2022-00837-D	MPDL Services GmbH	1 January 2022	31 December 2022	-418.96	EUR
W-2023-00115-A	MPDL Services GmbH	January 2023	31 December 2023	282474	EUR

Payments

Invoice	Amount	Currency	Type
R-2019-00028	256847	EUR	Read and Publish
R-2019-00028	48800.9	EUR	VAT

Export

openCost XML

Links to other Systems

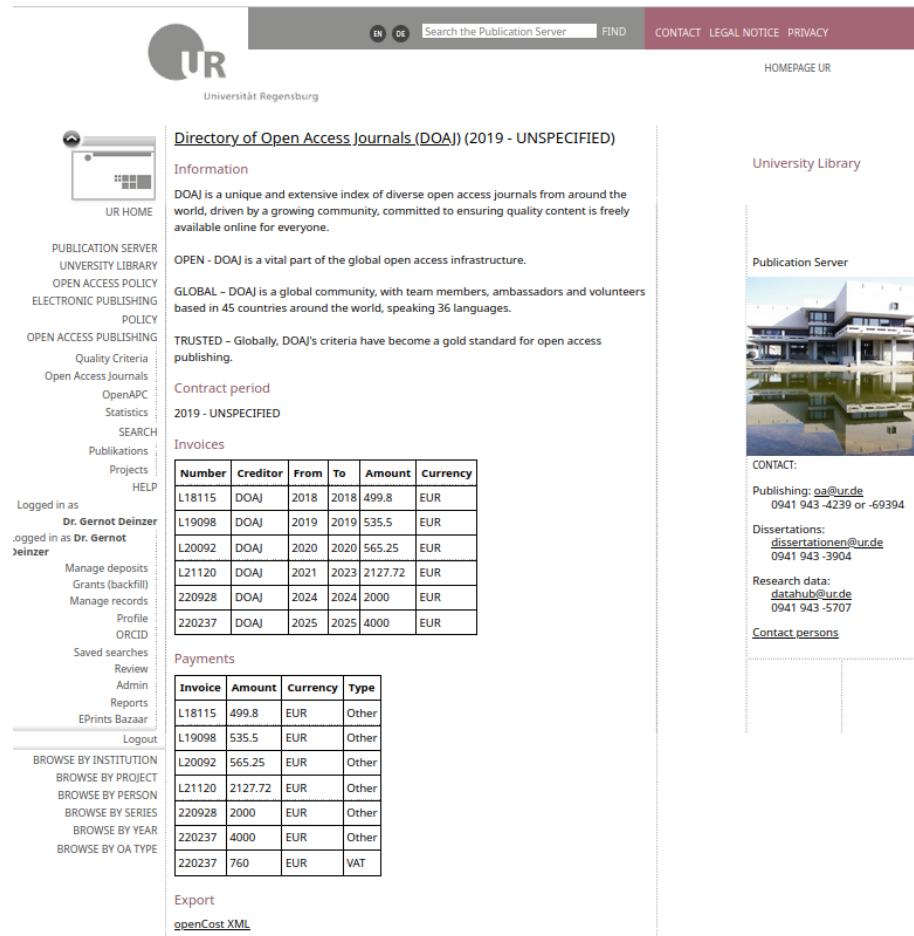
EZB

ESAC

Publications

Baird, D. L., Nahlawi, A., Crossley, K., Lupton, John M. and, , (2020) *Electric Field Effects on Photoluminescence-Detected Magnetic Resonance of a π-Conjugated Polymer*; Physica Status Solidi (B), p. 1900493.
Sage, Tanguy and Kong, Burkhard , (2020) *Photocatalytic Synthesis of Polycyclic Indolones*; Chemistry - A European Journal, 7004 - 7007.

Example: infrastructure



The screenshot shows the University of Regensburg's Publication Server interface. At the top, there is a navigation bar with links for EN, DE, Search the Publication Server, FIND, CONTACT, LEGAL NOTICE, and PRIVACY. The main content area displays the Directory of Open Access Journals (DOAJ) (2019 - UNSPECIFIED). It includes sections for Information, Contract period (2019 - UNSPECIFIED), and Invoices. The Invoices section lists the following data:

Number	Creditor	From	To	Amount	Currency
L18115	DOAJ	2018	2018	499.8	EUR
L19098	DOAJ	2019	2019	535.5	EUR
L20092	DOAJ	2020	2020	565.25	EUR
L21120	DOAJ	2021	2023	2127.72	EUR
220928	DOAJ	2024	2024	2000	EUR
220237	DOAJ	2025	2025	4000	EUR

Below the invoices, there is a section for Payments with the following data:

Invoice	Amount	Currency	Type
L18115	499.8	EUR	Other
L19098	535.5	EUR	Other
L20092	565.25	EUR	Other
L21120	2127.72	EUR	Other
220928	2000	EUR	Other
220237	4000	EUR	Other
220237	760	EUR	VAT

At the bottom, there is an Export link to openCost XML.

<https://epub.uni-regensburg.de/id/contract/2>

Sharing of data

Are libraries/repository providers willing to openly share their publication cost data?



Goal: Transparency

Fairness and cost transparency in scientific publishing can only be achieved if this data is shared!

openCost:

- Automated standard reduces workload
- OAI interface: harvesting of cost metadata
- Cost transparency for publishing and reading
- Comparisons on institutional, national and international level

OpenAPC

The Open APC initiative releases data sets on fees paid for Open Access journal articles by universities and research institutions under an Open Database License.

Select a region from the map or use the list below to view APC data for individual institutions.



- Releases data sets on fees paid for OA journal articles by universities and research institutions under an Open Database License
- Willingness to share cost data:
419 institutions from Europe have contributed to the OpenAPC project
 - Sweden: 27 institutions
 - Germany: 122 institutions
 - France: 105 institutions
- OpenAPC metadata schema has been extended to the openCost metadata schema



Reuse of OpenAPC information in the Electronic Journals Library

▼ Publish in this journal

Secondary publication of your own articles from this journal in Open Access

Publisher's Open Access Policy

Publisher / Provider: Public Library of Science (PLoS); PubMed Central

Sherpa Romeo: [Find the publisher's Open Access policy in Sherpa Romeo](#)

Contribution to publication costs by your own institution

Person to Contact: Cornelia Lang (electronic publishing, publishing fund, electronic dissertations, research data), oa@ur.de

Funding*: For journal articles with an invoice date of 2023/2024, a contribution of €2000 will be provided if the journal is listed in <https://doaj.org/>, the article originated at UR, the corresponding author is a member of UR, and as a result, lists UR as their first affiliation in the article. All information and publishing agreements regarding free or discounted publishing are available at <https://epub.uni-regensburg.de/oa-publizieren.html>.

*This information is provided by your institution for guidance purposes. For binding information, please contact the appropriate contact person at your institution.

Website: <https://epub.uni-regensburg.de/oa-publizieren.html>

Information about Publishing

The Directory of Open Access Journals

Instructions for authors: [Link to the instructions](#)

Languages the journal accepts: English

APCs: Yes

APC amount: 2290 USD

Journal license: CC BY

Quality seal: DOAJ Seal

Review process: Anonymously

Plagiarism screening policy: Publisher

Duration of publishing process: 24 Weeks

Cost Information from OpenAPC

Institutions report the publication costs (APC) paid for this journal to OpenAPC:

Year	2021	2022	2023	2024
Average APC per article worldwide	1,557 EUR (777 record(s))	1,792 EUR (665 record(s))	1,756 EUR (258 record(s))	1,721 EUR (7 record(s))
Average APC per article in your institution	1,705 EUR (13 record(s))	2,003 EUR (8 record(s))	1,980 EUR (2 record(s))	- (no records)

Cost Information from OpenAPC

Institutions report the publication costs (APC) paid for this journal to OpenAPC:

Year	2021	2022	2023	2024
Average APC per article worldwide	1,557 EUR (777 record(s))	1,792 EUR (665 record(s))	1,756 EUR (258 record(s))	1,721 EUR (7 record(s))
Average APC per article in your institution	1,705 EUR (13 record(s))	2,003 EUR (8 record(s))	1,980 EUR (2 record(s))	- (no records)

Conclusion

First time, that cost data are published

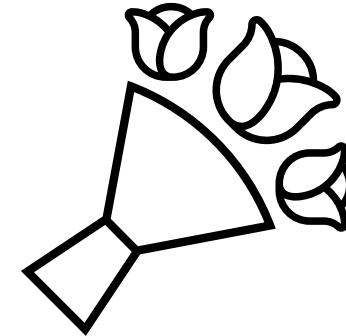
- Freely available
- Standardized
- Human readable
- Machine readable

Fulfilling **FAIR-principles**



Thanks

- openCost
- DFG-Grant 457354095
- Team
- **Julia Bartlewski, Christoph Broschinski, Dirk Pieper (Bielefeld)**
- **Lisa-Marie Stein, Alexander Wagner (Hamburg)**
- **Bianca Schweighofer (thanks for slides), Colin Sippl, Lisa-Marie Stein, Alexander Wagner, Silke Weisheit (Regensburg)**





Thank you for the attention!

- Website: <https://opencost.de/en>
- openCost publications: <https://www.opencost.de/en/publications/>
- openCost mailing list: opencost.info@mailman.uni-regensburg.de
- Github repository: <https://github.com/opencost-de/opencost>
 - Contains the schema and its documentation (including FAQs, tabular description, XSD file for formal verification, and folder with valid sample files)
 - Tracks the evolution of the schema in a transparent way