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YOU CAN'T STANDARDISE WHAT YOU DON'T CAPTURE: THE OPENCOST INTERNAL FORMAT AND A MYCORE IMPLEMENTATION DEMO



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My Content Repository Framework

MyCoRe

Your framework for presentation and management of digital content

www.mycore.org



versatile

for repositories, archives, digitised image collections and much more.



adaptable

in data model, search function, layout for your own repository




persistent

continuous development in a community for more than 25 years

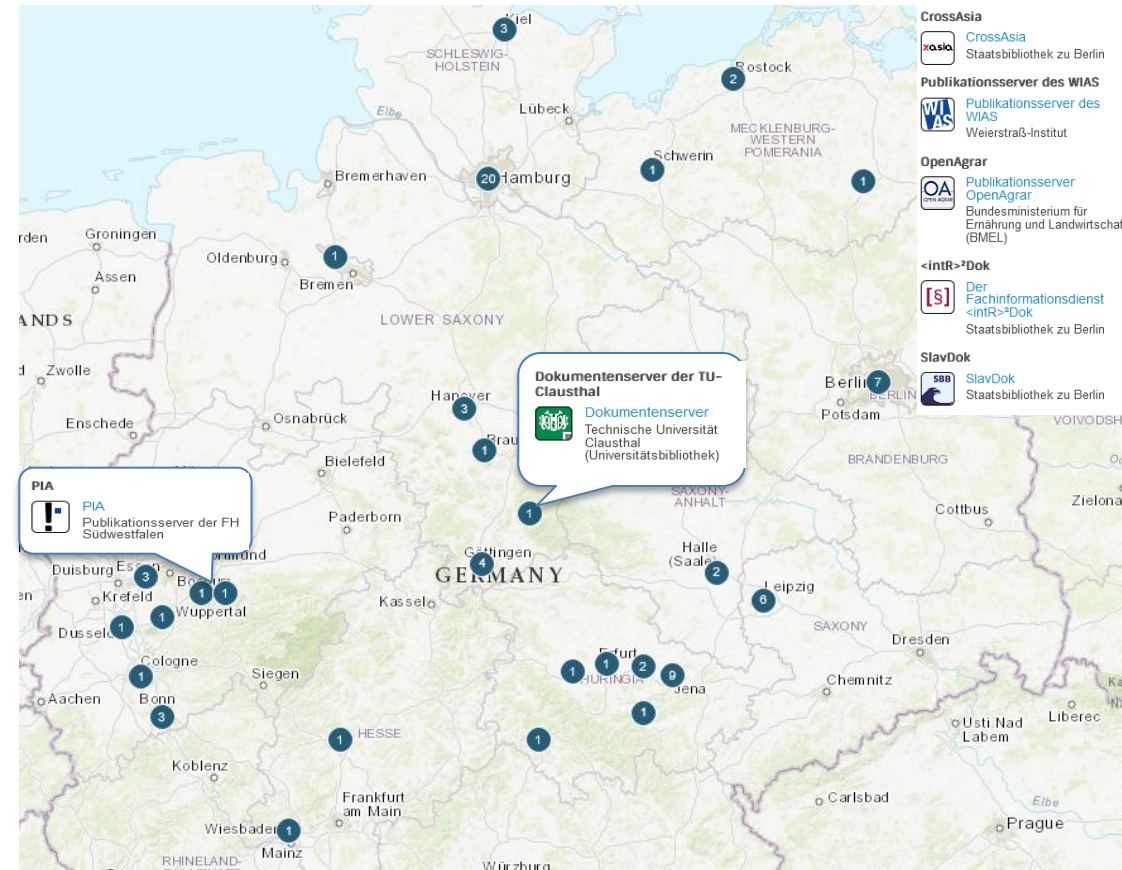
70+ Projects

DuEPublico intRechtDok MACAU OpenAgrar LexM
Rostocker Professorenkatalog Journals@UrMEL Bach digital

Map 

Various MyCoRe based applications hosted and developed at VZG

- MIR – MyCoRe / MODS Institutional Repository
- UBO – University Bibliography Online
- Digital Scholarly Editions
- ProfKat – Catalogue of university professors (hosting in development)



openCost meets MyCoRe

- in 2022 JOIN² and MyCoRe community first met
- in 2023 we discussed about publication costs in MyCoRe MIR
- **but** also great interest in the bibliography community (UBO)
- so we decided to implement openCost for both: MIR and UBO
... and it is still in progress

Cost Data

Manuscript ID: Journal Categories:

Eligibility: none | Authorisation: none | External Costsplitting: none

Part of Contract: (please choose)

Invoice

Number: Creditor: Date: TT.MM.JJJJ | Paid Date: TT.MM.JJJJ | Amount: Currency: EUR

Amounts Paid

Loc Amo	Loc Curr	Cost Type	VAT	Status	Method	Model	Ori Amo	Ori Curr	Paying Unit	Cost Centre	General Ledger Account	Transfer	Payment Date	Comment
EUR	EUR	gold-oa		payment instructed	credit card	article-based	EUR						TT.MM.JJJJ	
EUR	EUR	gold-oa		payment instructed	credit card	article-based	EUR						TT.MM.JJJJ	

Invoice

Number: Creditor: Date: TT.MM.JJJJ | Paid Date: TT.MM.JJJJ | Amount: Currency: EUR

Amounts Paid

Loc Amo	Loc Curr	Cost Type	VAT	Status	Method	Model	Ori Amo	Ori Curr	Paying Unit	Cost Centre	General Ledger Account	Transfer	Payment Date	Comment
EUR	EUR	gold-oa		payment instructed	credit card	article-based	EUR						TT.MM.JJJJ	

DES

SEARCH | SUBMIT | PERSONALIZE | HELP

PUBDB
DES Publications Database

Home > Publications database > Structures and internal dynamics of diphenylether and its aggregates with water

Typ	Amount	VAT	Currency	Share	Status	Cost centre
Cover	559.69	0.00	EUR	100.00 %	(Zahlung erfolgt)	80375 / 476500
Sum	559.69	0.00	EUR			

Total 559.69

Journal Article **PUBDB-2020-04988**

Structures and internal dynamics of diphenylether and its aggregates with water

Fatima, M.*; Maué, D.; Pérez, C.; Tikhonov, D.*; Bernhard, D.; Stamm, A.; Medcraft, C.; Gerhards, M. (Corresponding author); Schnell, M. (Corresponding author)*

2020
RSC Publ. Cambridge

Physical chemistry, chemical physics 22(48), 27966 - 27978 (2020) [10.1039/D0CP04104A]

This record in other databases: PubMed.gov | WEB OF SCIENCE | OpenAlex | Citations 12

Please use a persistent id in citations: doi:10.1039/D0CP04104A doi:10.3204/PUBDB-2020-04988

Abstract: We report on a detailed multi-spectroscopic analysis of the structures and internal dynamics of diphenylether and its aggregates with up to three water molecules by employing molecular beam experiments. The application of stimulated Raman/UV and IR/UV double resonance methods as well as chirped-pulse Fourier transform microwave spectroscopy in combination with quantum-chemical computations yield the energetically preferred monomer and cluster geometries. Furthermore, the complex internal dynamics of the diphenylether monomer and the one-water clusters are analysed. In the cluster with three water molecules, water forms a cyclic structure similar to the isolated water trimer. The interactions ruling the structures of the higher-order water clusters are a combination of the ones identified for the two monohydrate isomers, with dispersion being a decisive contribution for systems that have a delicate energetic balance between different hydrogen-bonded arrangements of similar energy.

enter cost data directly in your repository

show publication cost on metadata page

use cost tracking tools

```
<mods:extension type="openCost">
  <opencost />
  <opencost_intern />
</mods:extension>
```

persist cost data embedded in MODS

provide cost data via APIs

?

OAI 2.0 Request Results

Identify | ListSets | ListMetadataFormats | ListIdentifiers | ListRecords (marcxml) | ListRecords (mods) | ListRecords (metaDataPlus) | ListRecords (openCost) | ListRecords (oai_dc) | ListRecords (repositor)

You are viewing an HTML version of the XML OAI response. To see the underlying XML use your web browser's view source option. More information about this XSLT is at the [bottom of the page](#).

Datestamp of response: 2026-03-18T15:50:21Z
Request URI: http://localhost:8291/mir/servlets/OAIDataProvider

Request was of type ListRecords.

OAI Record: oai:www.mycore.de:mir_mods_00000002

OAI Record Header

OAI Identifier: oai:www.mycore.de:mir_mods_00000002 [marcxml](#) [mods](#) [xMetaDisPlus](#) [openCost](#) [oai_dc](#) [opical](#) [formats](#)

Datestamp: 2026-03-18

setSpec: GENRE:article [Identifiers](#) [Records](#)

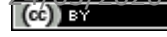
setSpec: ddc:540 [Identifiers](#) [Records](#)

setSpec: doc-type:article [Identifiers](#) [Records](#)

setSpec: openCost [Identifiers](#) [Records](#)

18/03/2026

24/03/2026



Enrich existing data based on publication identifier

- library catalogue systems offer the option to handle publication related invoices
- colleagues in Duisburg Essen implement an interface to provide this data from ALMA in openCost (work in progress)
- we can enrich existing metadata in UBO using the publication shelfmark, DOI or other publication identifier
- this makes it possible to use MyCoRe features like
 - display of costs for more transparency
 - OAI PMH 2.0 for interoperability

Code Blame 58 lines (58 loc) · 2.24 KB

```

1 <?xml version="1.0"?>
2 <opencost:data xmlns:opencost="https://opencost.de" xmlns:datacite="https://schema.datacite.org/meta/kernel-4/metadata.xsd">
3   <opencost:publication>
4     <opencost:institution>
5       <opencost:id>
6         <opencost:value>https://ror.org/01js2sh04</opencost:value>
7         <opencost:type>ror</opencost:type>
8       </opencost:id>
9       <opencost:name>
10        <opencost:value>desy</opencost:value>
11        <opencost:type>short</opencost:type>
12      </opencost:name>
13    </opencost:institution>
14    <opencost:primary_identifier>
15      <opencost:doi>10.1364/OPTICA.3.000816</opencost:doi>
16    </opencost:primary_identifier>
17    <opencost:publication_type>journal article</opencost:publication_type>
18    <opencost:secondary_identifiers>
19      <opencost:id>
20        <opencost:value>PUBDB-2016-02671</opencost:value>
21        <opencost:type>local</opencost:type>
22      </opencost:id>
23      <opencost:id>
24        <opencost:value>oai:bib-pubdb1.desy.de:301439</opencost:value>
25        <opencost:type>oai</opencost:type>
26      </opencost:id>
27      <opencost:id>
28        <opencost:value>10.1364/OPTICA.3.000816</opencost:value>
29        <opencost:type>doi</opencost:type>
30      </opencost:id>
31      <opencost:id>
32        <opencost:value>10.3204/PUBDB-2016-02671</opencost:value>
33        <opencost:type>doi</opencost:type>
34      </opencost:id>
35    </opencost:secondary_identifiers>
36    <opencost:cost_data>
37      <opencost:invoice>
38        <opencost:amount_invoice>
39          <opencost:currency>USD</opencost:currency>
40          <opencost:amount>1350.0</opencost:amount>
41        </opencost:amount_invoice>
42        <opencost:amounts_paid>
43          <opencost:amount_paid>
44            <opencost:amount>1234.95</opencost:amount>
45            <opencost:currency>EUR</opencost:currency>

```

As the publication metadata is already entered in MODS, we only put the cost data into mods:extension[@type="opencost"]

```

> <mods:extension type="opencost">
> .. <opencost:data xmlns:opencost="https://opencost.de"
> ..... xsi:schemaLocation="https://opencost.de/opencost_intern.xsd">
> ..... <opencost:cost_data>
> ..... <opencost:invoice>
> ..... <opencost:amount_invoice>
> ..... <opencost:currency>USD</opencost:currency>
> ..... <opencost:amount>1350.0</opencost:amount>
> ..... </opencost:amount_invoice>
> ..... [...]
> ..... </opencost:cost_data>
> .. </opencost:data>
</mods:extension>

```

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XSL transformation from MODS to openCost

OAI Record: oai:www.mycore.de:mir_mods_00000002

OAI Record Header

OAI Identifier oai:www.mycore.de:mir_mods_00000002 [marcxml](#) [mods](#) [xMetaDissPlus](#) [openCost](#) [oai_dc](#) [epicur](#) [formats](#)

Datestamp 2026-03-18

setSpec GENRE:article [Identifiers](#) [Records](#)

setSpec ddc:540 [Identifiers](#) [Records](#)

setSpec doc-type:article [Identifiers](#) [Records](#)

setSpec openCost [Identifiers](#) [Records](#)

Unknown Metadata Format

```
<opencost:data>
  <opencost:publication>
    <opencost:institution>
      <opencost:name>
        <opencost:type>short</opencost:type>
        <opencost:value>Desy</opencost:value>
      </opencost:name>
      <opencost:id>
        <opencost:type>ror</opencost:type>
        <opencost:value>https://ror.org/01js2sh04</opencost:value>
      </opencost:id>
    </opencost:institution>
    <opencost:primary_identifier>
      <opencost:doi>10.1039/D0CP04104A</opencost:doi>
    </opencost:primary_identifier>
    <opencost:secondary_identifiers>
      <opencost:id>
        <opencost:type>local</opencost:type>
        <opencost:value>http://localhost:8291/mir/receive/mir_mods_00000002</opencost:value>
      </opencost:id>
    </opencost:secondary_identifiers>
    <opencost:cost_data>
      <opencost:part_of_contract>
        <opencost:primary_identifier>
          <opencost:value>Primary Identifier (Value)</opencost:value>
          <opencost:type>ESAC</opencost:type>
        </opencost:primary_identifier>
      </opencost:part_of_contract>
      <opencost:invoice>
        <opencost:invoice_number>INV_008530</opencost:invoice_number>
        <opencost:creditor>RSC Publ.</opencost:creditor>
        <opencost:dates>
          <opencost:invoice>2020-12-10</opencost:invoice>
          <opencost:paid>2020-12-15</opencost:paid>
        </opencost:dates>
        <opencost:amount_invoice>
          <opencost:amount>500</opencost:amount>
          <opencost:currency>GBP</opencost:currency>
        </opencost:amount_invoice>
        <opencost:amounts_paid>
          <opencost:amount_paid>
            <opencost:amount>559.69</opencost:amount>
            <opencost:currency>EUR</opencost:currency>
          </opencost:amount_paid>
        </opencost:amounts_paid>
      </opencost:invoice>
    </opencost:cost_data>
  </opencost:publication>
</opencost:data>
```

Provide the publication cost data in the openCost XML exchange format for example via OAI PMH 2.0

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Configuration options

- enable or disable via mycore.properties
 - Enrichment: configure sources that provide openCost XML
 - Editing: use `<xed:include ref="extension.opencost" />`
 - OAI PMH 2.0: add "openCost" to
MCR.OAIDataProvider.OAI2.MetadataFormats
MCR.OAIDataProvider.OAI2.Sets
 - metadata view: add "mir-opencost" to MIR.Layout.End (work in progress)

MyCoRe openCost Demo

Manuscript ID Journal Categories

Eligibility Authorisation External Costsplitting

Part of Contract

Primary Identifier (Value) Type

Contract

Invoice i + -

Number	Creditor	Date	Paid Date	Amount	Currency
<input type="text" value="INV_008530"/>	<input type="text" value="RSC Publ."/>	<input type="text" value="10.12.2020"/>	<input type="text" value="15.12.2020"/>	<input type="text" value="500"/>	<input type="text" value="GBP"/>

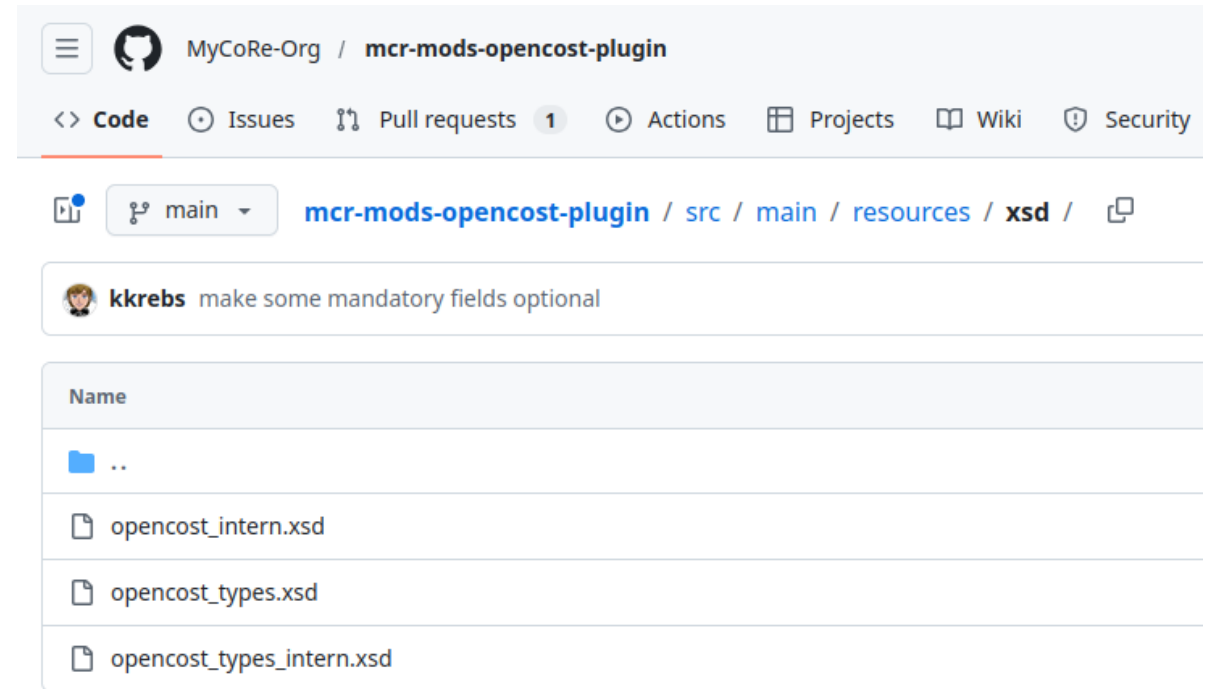
Amounts Paid

Loc Amo	Loc Curr	Cost Type	VAT	Status	Method	Model	Ori Amo	Ori Curr	Paying Unit	Cost Centre	General Ledger Account	Transfer
<input type="text" value="559.69"/>	<input type="text" value="EUR"/>	<input type="text" value="cover charge"/>	<input type="text" value="19"/>	<input type="text" value="processing completed"/>	<input type="text" value="credit card"/>	<input type="text" value="article-based"/>	<input type="text" value="500"/>	<input type="text" value="GBP"/>	<input type="text" value="pu"/>	<input type="text" value="cc"/>	<input type="text" value="gl"/>	<input type="text" value="transfer"/>

MyCoRe openCost plugin information

- <https://github.com/MyCoRe-Org/mcr-mods-opencost-plugin>
- GPL 3.0 license
- for testing purposes only

- ... but it is Open Source!



Questions?



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MyCoRe openCost implementation demo - Kathleen Neumann (VZG)

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