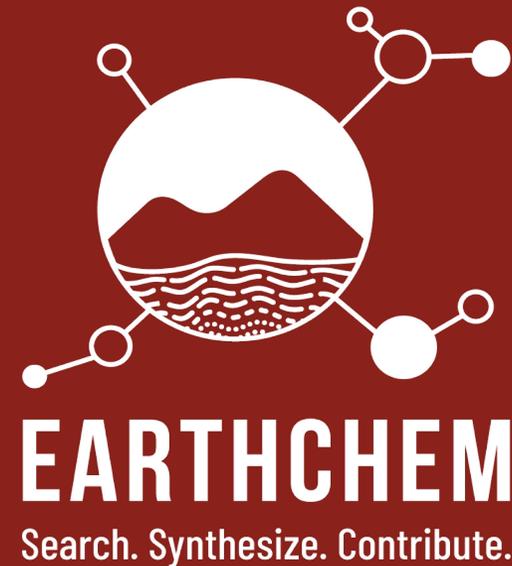
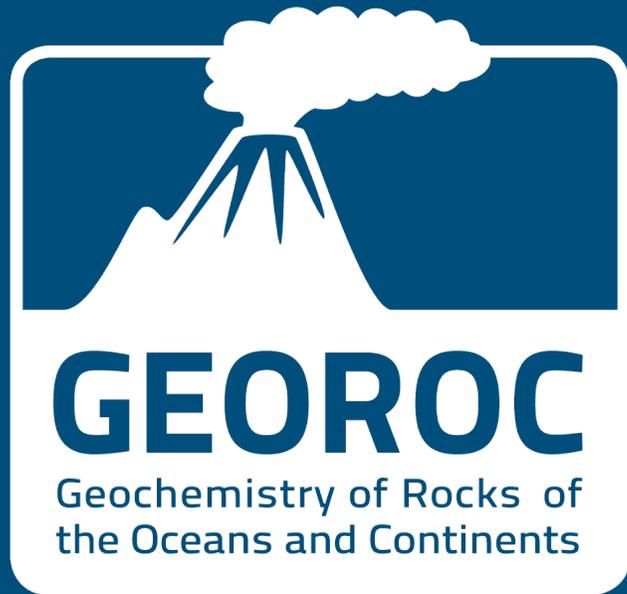


GEOROC and EarthChem: Optimizing Data Services for Geochemistry through Collaboration



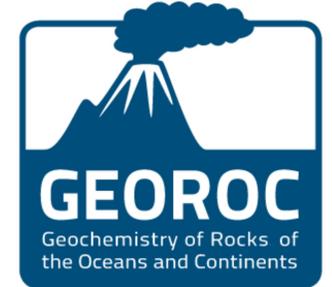
Marthe Klöcking, Bärbel Sarbas, Jan Brase, Wolfram Horstmann, Leander Kallas, Stefan Möller-McNett, Mariyam Mukhumova, Jens Nieschulze, Adrian Sturm, Matthias Willbold, Gerhard Wörner

Kerstin Lehnert, Lucia Profeta, Sean Cao, Juan David Figueroa, Peng Ji, Annika Johansson, Hannah Sweets

Geochemical databases since 1999

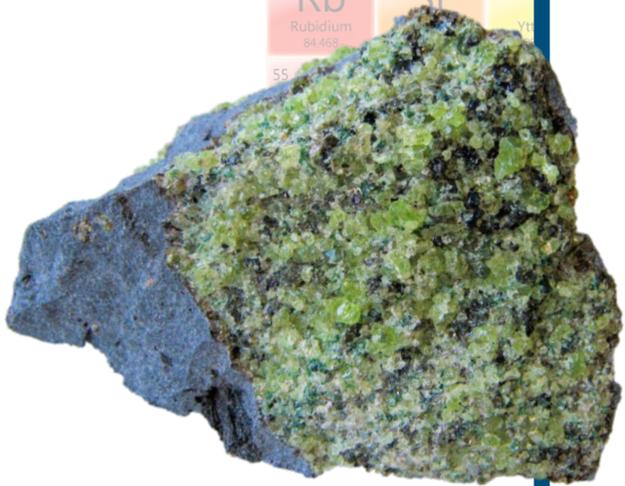
PetDB

Periodic Table of the Elements



major- and minor elements,
trace elements,
stable and radiogenic isotopes,
analytical ages
of rocks, glasses, minerals and inclusions

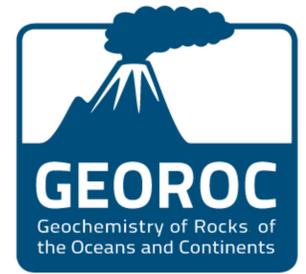
manual data compilation
from published literature: 1883-today

A partial periodic table showing the first two columns of elements. The elements shown are Lithium (Li), Beryllium (Be), Sodium (Na), Magnesium (Mg), Potassium (K), Calcium (Ca), Rubidium (Rb), and Strontium (Sr). Each element cell includes its symbol, name, and atomic weight.A partial periodic table showing elements from groups 17 and 18, plus the last element in the table. The elements shown are Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Neon (Ne), Argon (Ar), Krypton (Kr), Xenon (Xe), and Lawrencium (Lr). Each element cell includes its symbol, name, and atomic weight.

Alkali Metal	Alkaline Earth	Transition Metal	Basic Metal	Semimetal	Nonmetal	Halogen	Noble Gas	Lanthanide	Actinide
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Metadata

PetDB



Related Publication(s)

Samples

Methods

Authors

Coordinates, elevation

Analytical method

Institutions

Location description

Accuracy & Precision

Citation

Rock/Mineral classification

Units

DOI

Sample description

Standards

Age

Normalisation (isotopes)

Fractionation correction



EarthChem is funded by the US National Science Foundation as part of the IEDA2 Data Facility.

EarthChem is part of a comprehensive

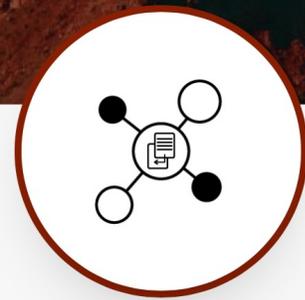
<https://www.earthchem.org>

EarthChem

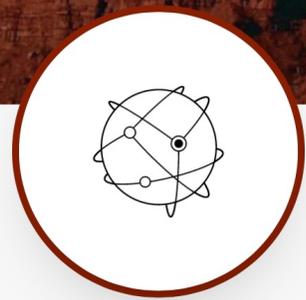
Community-driven preservation, discovery, access, and visualization of geochemical, geochronological, and petrological data



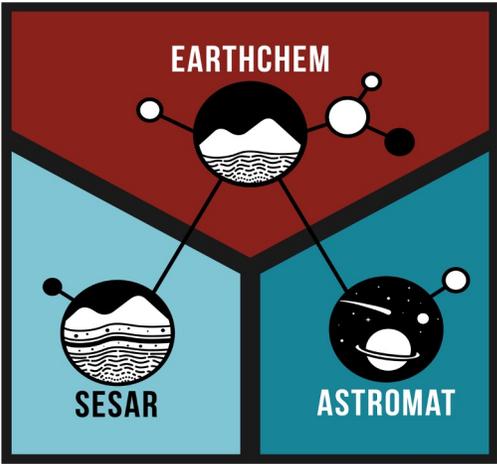
SEARCH DATA



CONTRIBUTE DATA



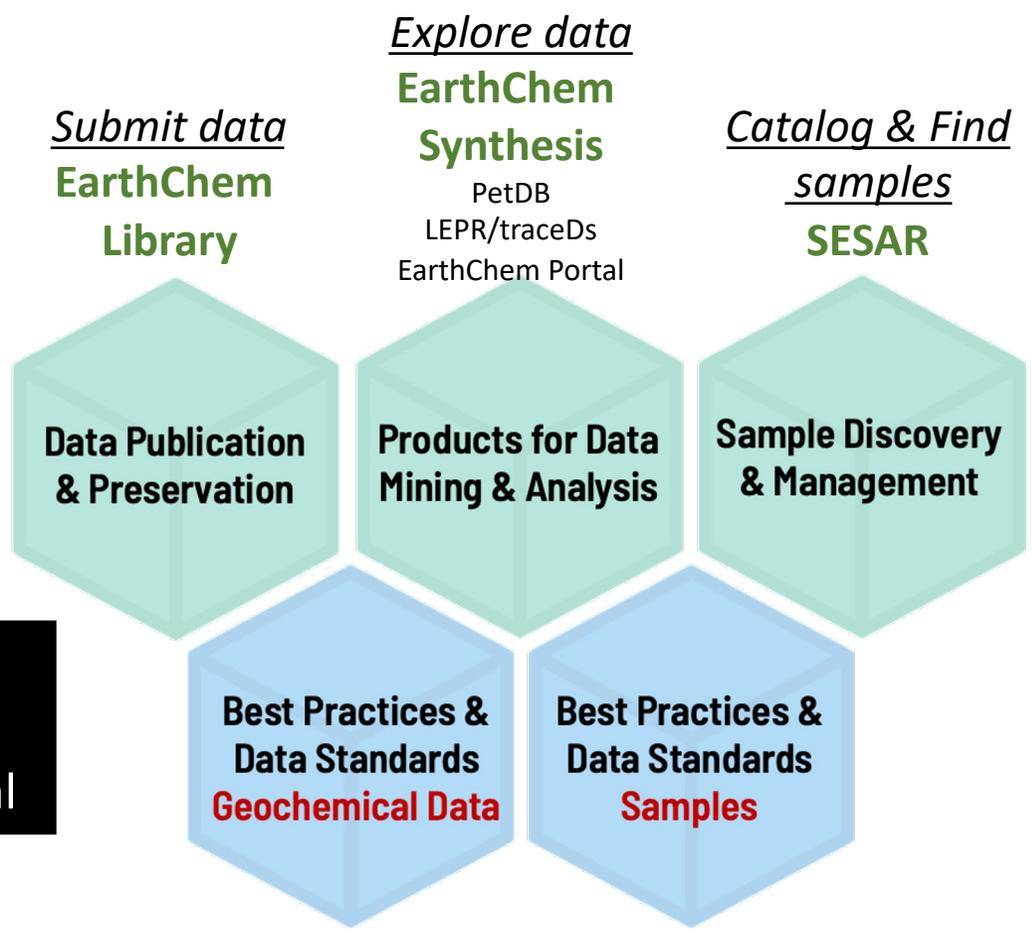
COMMUNITIES



- ✓ >1,100 datasets published in ECL
- ✓ ECL recommended by publishers
- ✓ Access to >30M values at the EC Portal

EarthChem is operated as part of a suite of data systems for sample-based data.

EarthChem Services



GEOROC 2.0

<https://georoc.eu>



DIGIS

Digital Geochemistry Infrastructure
for GEOROC 2.0

<http://digis.geo.uni-goettingen.de>

DFG Deutsche
Forschungsgemeinschaft
German Research Foundation

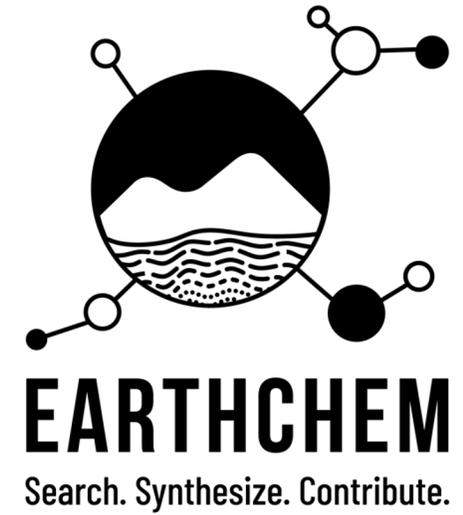
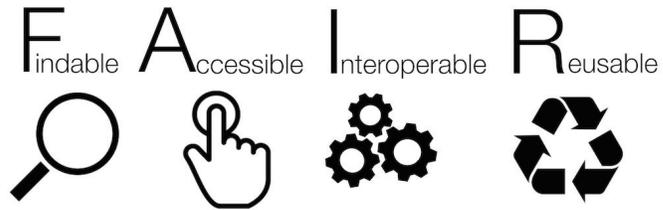
- Interoperable Data Model
- Repository for Data Upload
- Flexible Data Access
- Semantic Data Harvesting

Data Holdings:

- 20,430 papers
- 614,620 samples
- 2,183,180 analyses
- 31,677,340 values

Coordinate, Align & Exchange

- Technologies
- Procedures (QA/QC)
- Data
- Personnel
- Community engagement
- Research projects

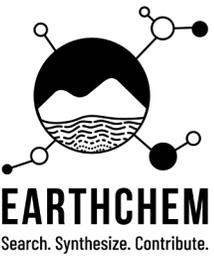


Digital Geochemistry Infrastructure
for GEOROC 2.0

OneGeochemistry



Digital Geochemistry Infrastructure
for GEOROC 2.0



“OneGeochemistry seeks to create a global geochemical data network that facilitates and promotes discovery and access of geochemical data through **coordination and collaboration among international geochemical data providers.**”



- envisioned as a **distributed architecture**, where geochemical data are available globally using standard web services.
- require that the **international geochemistry community** come together and **agree on the standards (including vocabularies and ontologies)** that will enable geochemical data from participating providers to be FAIR.