



FAIR research data with **NOMAD**

Tutorial 16: Getting started with NOMAD for materials-science research data management

Adrianna Wojas, Ahmed Mansour, Siamak Nakhaie

Agenda

Part 1 - Adrianna Wojas

Introduction to NOMAD public service and its main functionalities

Hands-on Part 2 - Siamak Nakhaie

Exploring NOMAD entries with search filters and interactive widgets.

Hands-on Part 4 - Ahmed Mansour

From raw data files to published datasets

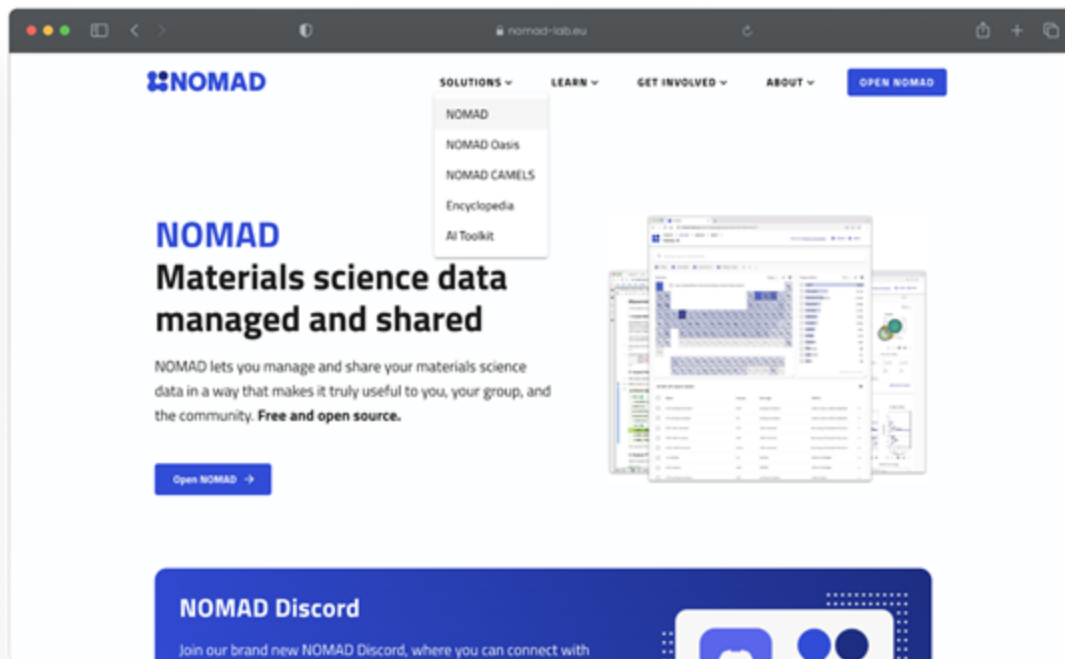
Live-demo – Part 4 - Siamak Nakhaie

Guiding through the steps for documenting research using NOMAD ELN functionality.

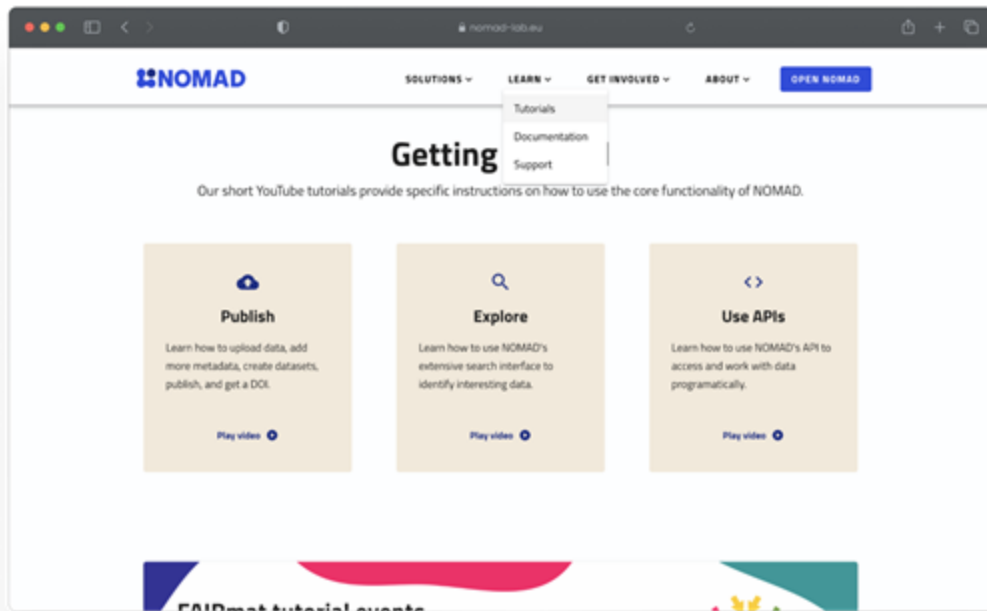
Introduction

- FAIRmat and NOMAD
- NOMAD and NOMAD Oasis
- One source -> all data
- Made by researchers for researchers

Our website



Learn more



▶ Let's go to [Discord](#), [click here!](#)

Documentation

The screenshot shows a web browser window with the URL <https://www.fairmat-nfdi.eu>. The page title is "NOMAD Documentation". A search bar is located in the top right corner. On the left side, there is a navigation menu with the following items: Documentation, Home, Tutorial (expanded), Navigating to NOMAD (highlighted), Uploading and publishing data, Exploring data, Access data via API, Schemas and plugins, Developing a NOMAD plugin, How-to guides, Domain-specific examples, Explanation, and Reference. The main content area is titled "Navigating to the NOMAD repository". It contains the following text: "There are several access points to the NOMAD repository. The general [landing page](#) will give you a quick rundown of NOMAD's usage and features, and provides several links to documentation, tutorials, and the history behind the project. From this page, we can navigate to the NOMAD repository, where we can upload, manage, and explore data. There are 2 public versions available: 1. *stable*, which is accessed by clicking the "Open NOMAD" button at the top of the landing page (highlighted orange in images below). 2. *beta /staging*, which has the latest release and updates much more frequently, but may also harbor unstable or untested features. You can navigate to this version via two distinct links: 1. at the bottom-right corner of the landing page and 2. under "SOLUTIONS" > "NOMAD" > "Try and Test" in the top navigation menu (highlighted red in images below)." Below the text are two small screenshots. The left screenshot shows the NOMAD landing page with the "Open NOMAD" button highlighted in orange. The right screenshot shows the "Other NOMAD versions" section with a red circle around a link in the "beta" column.

What does a centralized installation offer me?

Explore

- Search and filter
- Custom widgets
- Reuse data
- 19M+ entries

Upload

- Preserve data
- Structured data
- Built-in parsers
- Add references

Publish

- Share data
- Publish with embargo
- Get DOI

Document

- Built-in ELN
- Link your entries
- Structured data

Customize

- Create custom ELN schema
- Tabular parser

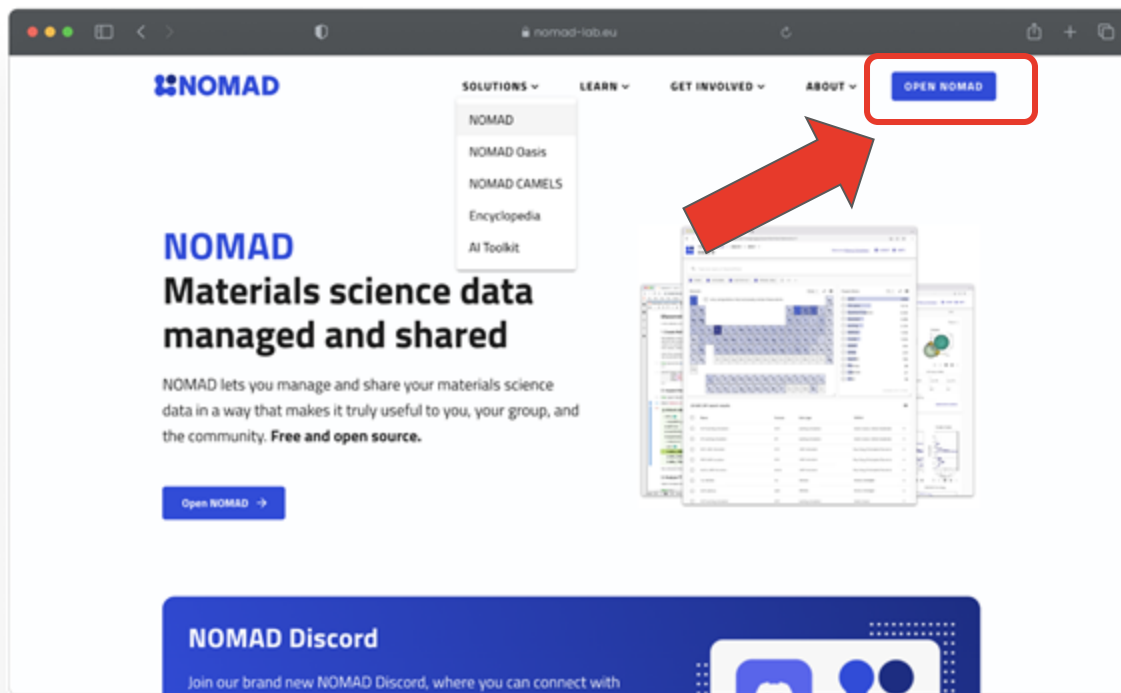
Analyze

- NORTH tools
- Integrated Jupyter notebooks
- AI Toolkit

API

- Query any data
- OPTIMADE
- DCAT

NOMAD service



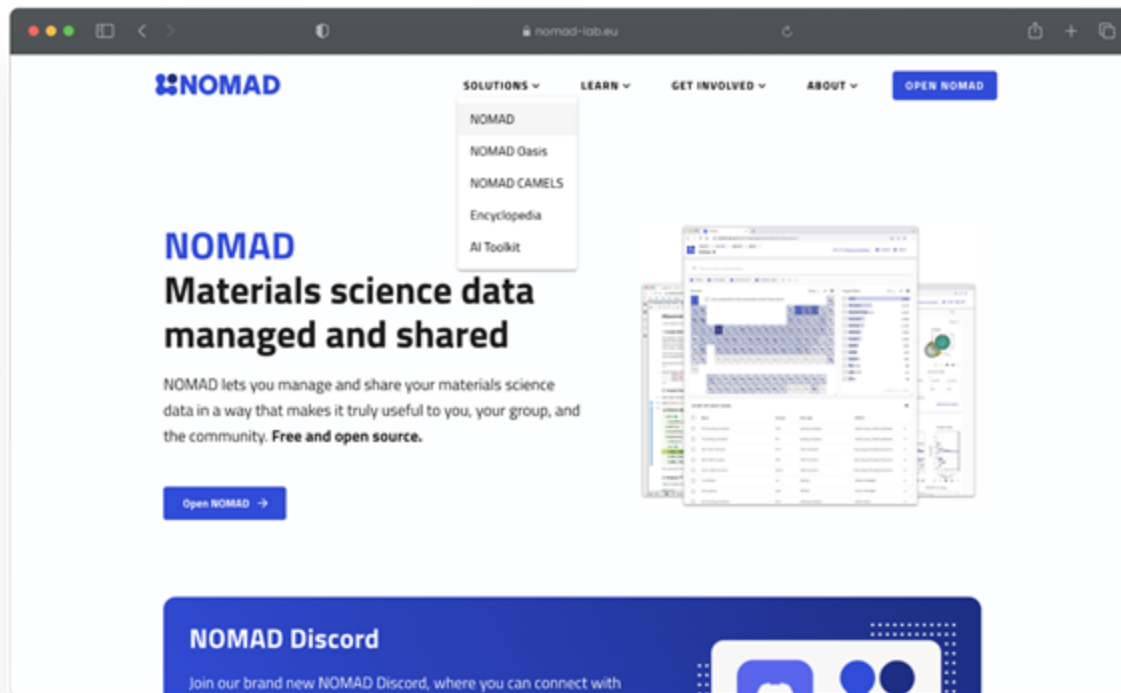
Let's go to **NOMAD**,
[click here!](#)

Summary

- FAIR, open, bottom-up
- Created for researchers by researchers
- Ready to use, public service
- Open for customization - NOMAD Oasis

NOMAD software development is funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation); project 460197019 (FAIRmat NFDI consortium).

Questions?



The screenshot shows the NOMAD website homepage. At the top left is the NOMAD logo. To its right is a navigation menu with the following items: SOLUTIONS (with a dropdown arrow), LEARN (with a dropdown arrow), GET INVOLVED (with a dropdown arrow), ABOUT (with a dropdown arrow), and a blue button labeled OPEN NOMAD. The dropdown menu for SOLUTIONS is open, showing the following options: NOMAD, NOMAD Oasis, NOMAD CAMELS, Encyclopedia, and AI Toolkit. The main content area features the heading "NOMAD Materials science data managed and shared" in large blue and black text. Below this is a paragraph: "NOMAD lets you manage and share your materials science data in a way that makes it truly useful to you, your group, and the community. **Free and open source.**" To the right of the text are three overlapping screenshots of the NOMAD software interface, showing a periodic table, a data table, and a 3D molecular model. At the bottom of the page, there is a blue banner for "NOMAD Discord" with the text "Join our brand new NOMAD Discord, where you can connect with" and a partial view of a Discord server icon.