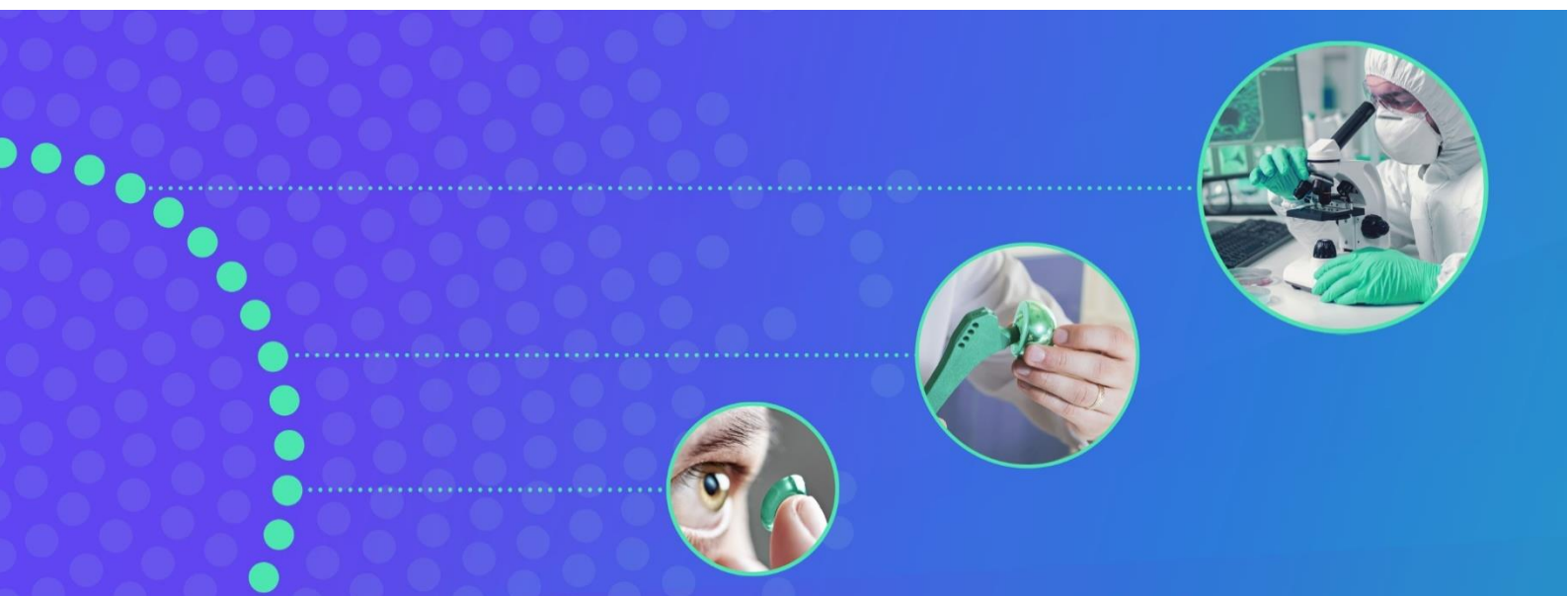




BIOMATDB

ADVANCED DATABASE FOR BIOMATERIALS WITH DATA ANALYSIS AND VISUALISATION TOOLS EXTENDED BY A MARKETPLACE WITH DIGITAL ADVISORS

Grant Agreement: 101058779

D4.3 Database and Marketplace Application Frontend and Backend (Phase 2)

(Additional Document to the Demonstrator)

DISCLAIMER: While the BIOMATDB Biomaterial Marketplace, Biomaterial Database and the Knowledge Base represent the actual deliverable, this document is an additional, public report intended to show the development progress of the solutions.



Funded by
the European Union

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Project description

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Work package number	WP4
Work package title	DEVELOP: Database System, Data Analysis Tools, Web Applications, Backend Modules, and Multilingual Frontends
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Rights	BIOMATDB Consortium
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Reviewers	Athina Samara (UIO)

Executive Summary

This deliverable is a demonstrator and therefore mostly consists of screenshots, showcasing the development progress of the Biomaterial Database and the Biomaterial Marketplace within the second development phase. All the essential parts of both solutions have been developed and are up and running on the corresponding live instances.

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1 Introduction

This demonstrator provides a detailed overview of the implementation status of the Biomaterial Database and Biomaterial Marketplace within the BIOMATDB project. The document focuses on showcasing the development progress in the second development phase, primarily through visual representations that highlight the evolution and refinement of these technical solutions.

1.1 Overview

Biomaterial Database

Development wise, the Biomaterial Database can be divided into two key components: the frontend and the backend. The frontend presents a user-friendly interface for accessing and exploring bio-material-related research, while the backend is responsible for the provision of data for the frontend, including harvesting, extraction and pre-processing of biomaterial-related data.

Biomaterial Marketplace

The Biomaterial Marketplace aspires to offer a holistic platform containing diverse modules. The frontend serves as the user interface, providing a gateway to the marketplace's offerings. The backend powers the operational functionalities of the marketplace. It includes dedicated interfaces: a supplier panel for managing supplier-related activities (AdminBase) and an administrator panel overseeing and configuring the platform. Furthermore, the Advisors aim to provide guidance to users regarding EU project collaborations and funding opportunities.

Help System and Knowledge Base

This demonstrator does not include a section for the Help Systems and Knowledge Bases, which will in be showcased and described in detail in the dedicated deliverable, instead (D4.5).

1.2 Relation to other tasks and deliverables

This deliverable is related to the following other BIOMATDB tasks and deliverables:

Receives inputs from:

Table 1. D4.3 Input from other tasks and deliverables

Deliverable	Due Date	Input for D4.3
D4.1	30.06.2023	Database and web application system architecture (implementation status report)
D4.2	31.08.2023	Database and marketplace application frontend and backend (Phase 1)

Provides outputs to:

Table 2. D4.3 Output for other tasks and deliverables

Deliverable	Due Date	Output from D4.3
D5.3	31.01.2025	Demonstration and validation report (Phase 2)

1.3 Structure of the deliverable

The structure of this additional report outlines the current development stage of the BIOMATDB solutions, with individual chapters dedicated to distinct features and components. Chapter 2 presents the Biomaterial Database, encompassing the data backend and frontend interface. Chapter 3 presents the Biomaterial Marketplace, detailing the frontend designs of the various interfaces implemented, with a focus on the supplier administration panel and the Biomaterial Marketplace frontend.

2 Biomaterial Database

2.1 Data backend

2.1.1 Named Entity Recognition (NER)

New Named Entity Recognition (NER) models have been developed with the aim of enabling the extraction of concepts related to materials and biomaterials within PubMed abstracts. Following the pre-annotation of 311k PubMed biomaterials journal abstracts, groups of semantic categories relevant to biomaterials were identified with the collaboration of the consortium's experts. This process led to the formulation of four distinct annotation guidelines, which outline the criteria for annotating relevant biomaterials-related concepts and served as the basis for the creation of four pertinent corpora, as illustrated in Table 3. These corpora comprise the following categories: Biomaterial Types and Compositions, Cell Types and Cell Lines, Tissues and Organs, and Manufactured Objects. PubMed abstracts were manually annotated in accordance with the guidelines using the Brat annotation tool, thus generating the data necessary to train the four systems devised to detect the corresponding biomaterials-related concepts. Figures 1 and 2 illustrate the manual detection of chemical materials, along with synthetic polymers and manufactured objects, respectively.

Table 3. Biomaterial NER systems, together with their corresponding semantic categories

System	Semantic Categories
Biomaterial Types	Chemical_Material Natural_Polymer Synthetic_Polymer Metals_Alloys Ceramics_Glasses Composites Copolymers_Blends Trade_Name_Biomaterial
Manufactured Object	ManufObject TradeName (patent) MO_Feature
Tissues & Organs	Tissue_Organ
Cells	Cell

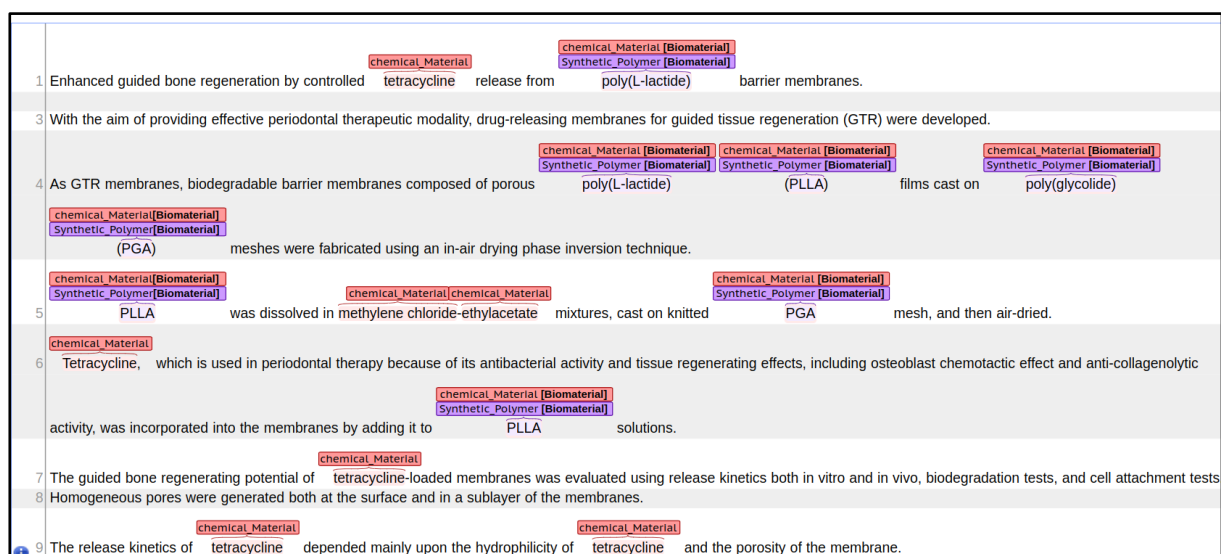


Figure 1. Brat screenshot of the manual annotation of chemical materials and synthetic polymers within a given PubMed abstract

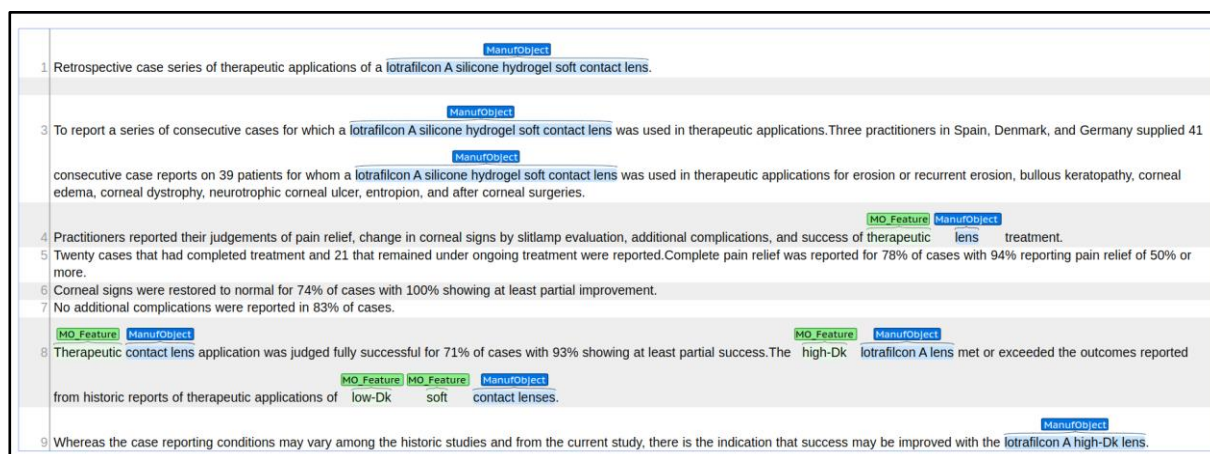


Figure 2. Brat screenshot of the manual annotation of manufactured objects within a given PubMed abstract

2.2 Data frontend

In the course of the project the following interfaces have been developed. The help system was also mentioned in Phase one of this deliverable. However, as it had its dedicated deliverable D4.5, we will not discuss it further here. Both systems are live and accessible without the need of a password.

The Biomaterial Database (frontend) still has a development version (devbiomaterialdatabase.com) that is password protected. This instance will be used to implement the collected feedback and test these new additions and modifications before deploying it to the live server.

Table 4. Biomaterial Database: Developed Interfaces

Interface	Screenshot	URL
Biomaterial Database (Frontend)		biomaterialdatabase.com

Help System		help.biomaterialdatabase.com
Data Interface (API)		biomaterialdatabase.com/api

Building upon the deliverable from the first phase, which showcased the initial layouts and click-dummies, we have now fully implemented the database frontend and presentation layer. This final development deliverable includes all views and features, except for components pending full data integration. The core functionalities are complete, and ongoing external and internal testing may lead to continuous minor adjustments to fix bugs, enhance usability, or incorporate user feedback until the end of the project. The provided URLs will always show the latest version.

The full data integration is anticipated to be completed by January 31, 2025 (accompanied by D4.5, where the Data Interface will also be described), which may require additional frontend development to ensure seamless performance. Additionally, the visualization feature for assessing biocompatibility is still in progress, as it depends on data currently being processed and annotated by the experts.

The database frontend now comprises the following pages and features:

Pages Overview:

- Home page
- Search and search results page
- Publication (result-item) detail view
- Search insights and analysis page
- Additional modules (projects, events and literature)
- Dashboard for static visualisations
- About

Feature Overview

- Advanced search functionality with Boolean and logic-based operators
- Advanced, Machine learning-powered search filters
- Multiple, interactive visual analytic components
- PDF-export of visualisations
- Data download capabilities
- Citation export functionality
- User collections for saving searches and publications
- Search result highlighting, including search term matches and entity-based highlighting (e.g., natural materials)

While development is at the last finetuning stages and nearly at its finalized form, the database remains subject to continuous refinement during the testing and data integration process to ensure optimal functionality and performance, usefulness and usability. Following this, screenshots of the application will be presented to provide a visual overview of its features and functionality.

On some of the screenshots, you will notice the "Database Feedback Form"-button allowing users to provide feedback. This feature is temporary and will be removed by mid-December.

Screenshots

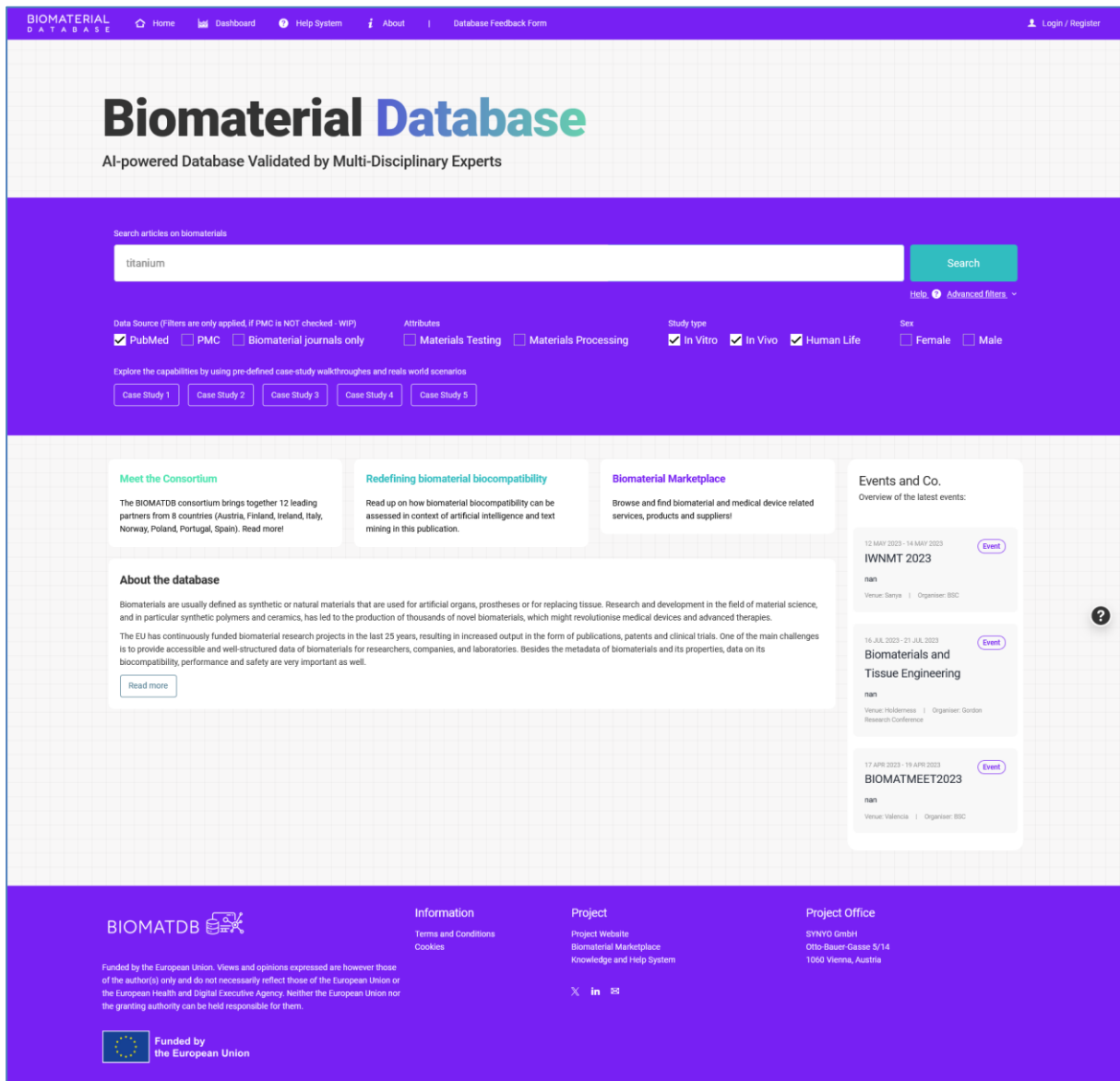


Figure 3. Home (Start) page

BIOMATERIAL DATABASE

Home Dashboard Help System About Database Feedback Form Login / Register

Search articles on biomaterials

titanium

17492 results | Similar queries: 'titanium', 'titanite', 'ticonium', 'titanis', 'titanic'

Share Search Save Search Advanced filters

Data Source (Filters are only applied, if PMC is NOT checked - WIP)

☒ PubMed ☐ PMC ☐ Biomaterial journals only

Attributes

☐ Materials Testing ☐ Materials Processing

Study type

☒ In Vitro ☒ In Vivo ☒ Human Life

Sex

☐ Female ☐ Male

The advanced filters allows you to explore the full power of the AI-powered database.

Material and Material Composition Model system Methodology Outcomes and Toxicity

None Selected None Selected None Selected None Selected

Bioactive Compounds Manufactured Product Categories mentioned in text Search field

None Selected None Selected e.g. Tissue Title and Abstract

Highlight in the Search Sorting Attribute Sorting Direction

Search Terms Ranking Score Descending Apply

February 1998 - DOI: 10.1023/a:1008847014938

Ranking-score: 8.53

Amount of hydroxyl radical on calcium-ion-implanted titanium and point of zero charge of constituent oxide of the surface-modified layer.

Journal Of Materials Science. Materials In Medicine

T Hanawa, M Kon, H Doi, H Ukai, K Murakami, H Hamanaka, K Asaoka

Save Cite Explain

July 2021 - DOI: 10.1177/00220345211000272

Ranking-score: 8.52

Observation of Cells on a Simulated Titanium Surface with Transparency.

Journal Of Dental Research

Save Cite Explain

Publications over Time

Expand Graph

Click to

Figure 4. Search results with highlighted search terms and expanded advanced filters

Highlight in the Search Sorting Attribute Sorting Direction

Search Terms Ranking Score Descending Apply

February 1998 - DOI: 10.1023/a:1008847014938

Ranking-score: 8.53

Amount of hydroxyl radical on calcium-ion-implanted titanium and point of zero charge of constituent oxide of the surface-modified layer.

Journal Of Materials Science. Materials In Medicine

T Hanawa, M Kon, H Doi, H Ukai, K Murakami, H Hamanaka, K Asaoka

To compare the surface properties of calcium-ion (Ca²⁺)-implanted titanium with those of titanium and to investigate the mechanism of bone conductivity of Ca²⁺-implanted titanium, amounts of hydroxyl radical of Ca²⁺-implanted titanium and titanium were estimated. Also, the point of zero charge (p.z.c.) of oxide constituting surface oxides of Ca²⁺-implanted titanium and titanium was determined. Results showed that the amount of active hydroxyl radical on Ca²⁺-implanted titanium was found to be significantly larger than that on titanium, indicating that the number of electric-charging sites of Ca²⁺-implanted titanium in electrolyte is more than that of titanium. The p.z.c. values of rutile (TiO₂), anatase (TiO₂), and perovskite (CaTiO₃), were estimated to be 4.6, 5.9, and 8.1, respectively. Thus, Ca²⁺-implanted titanium surface is charged more positively in bioliquid than titanium, accelerating the adsorption of phosphate ions.

Save Cite Explain

July 2021 - DOI: 10.1177/00220345211000272

Ranking-score: 8.52

Observation of Cells on a Simulated Titanium Surface with Transparency.

Journal Of Dental Research

K Teraoka, A Watazu, T Sonoda

Save Cite Explain

July 2021 - DOI: 10.4012/dmj.2020-351

Ranking-score: 8.44

Application of multi-directional forged titanium for prosthetic crown fabrication by CAD/CAM.

Dental Materials Journal

Masateru Anzai, Tomonari Kumasaka, Erika Inoue, Kazuhide Seimiya, Norishige Kawanishi, Tohru Hayakawa, Chikahiro Ohkubo, Hiromi Miura, Noriyuki Hoshi, Katsuhiko Kimoto

Save Cite Explain

Publications over Time

Expand Graph

Click to Visualise Associations

Ranking Score

0 2 4 6 8

Figure 5. Search results with expanded abstract

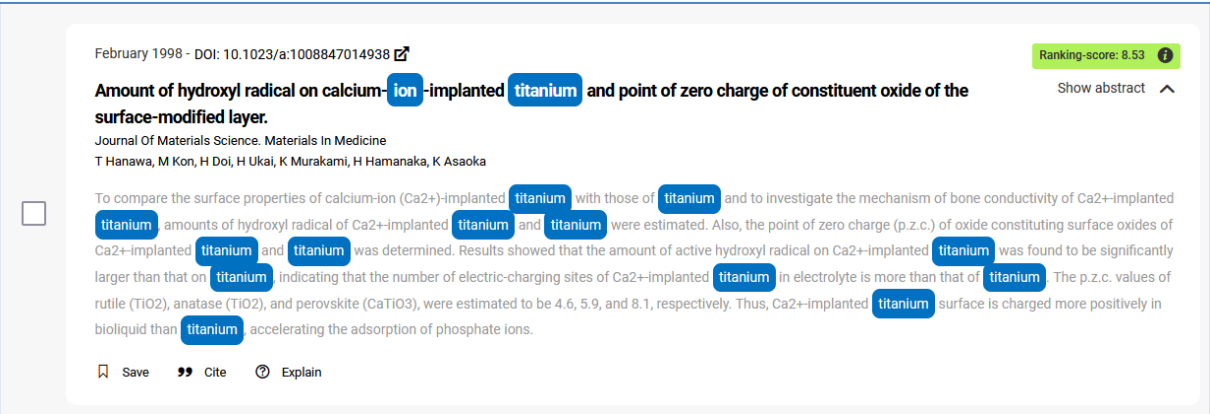


Figure 6. Entity-based highlighting

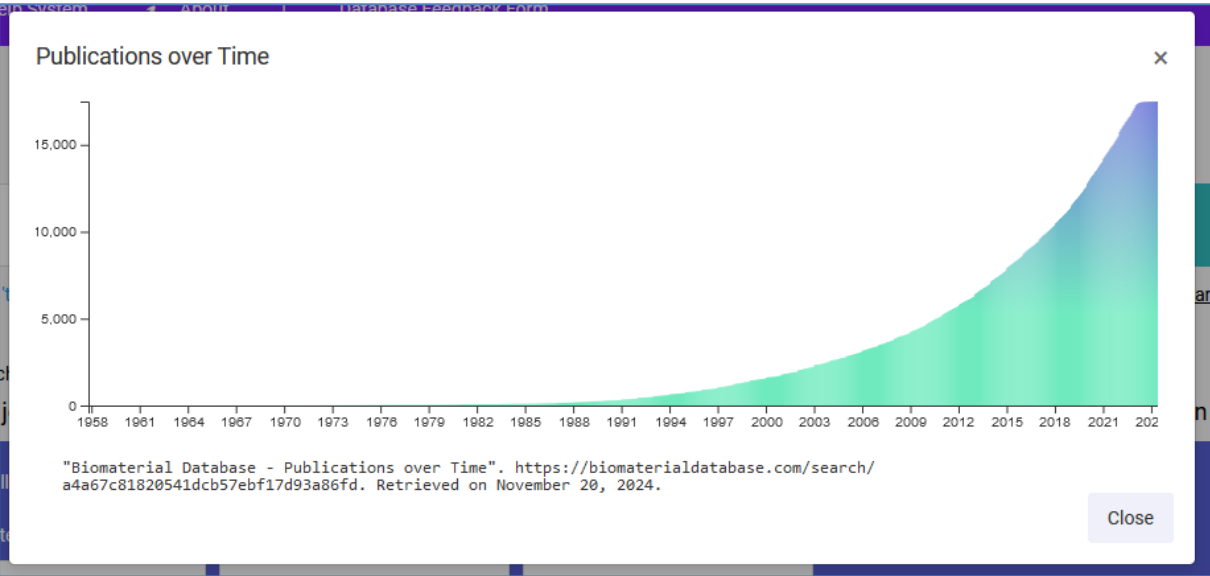


Figure 7. Visualisation of publications-over-time

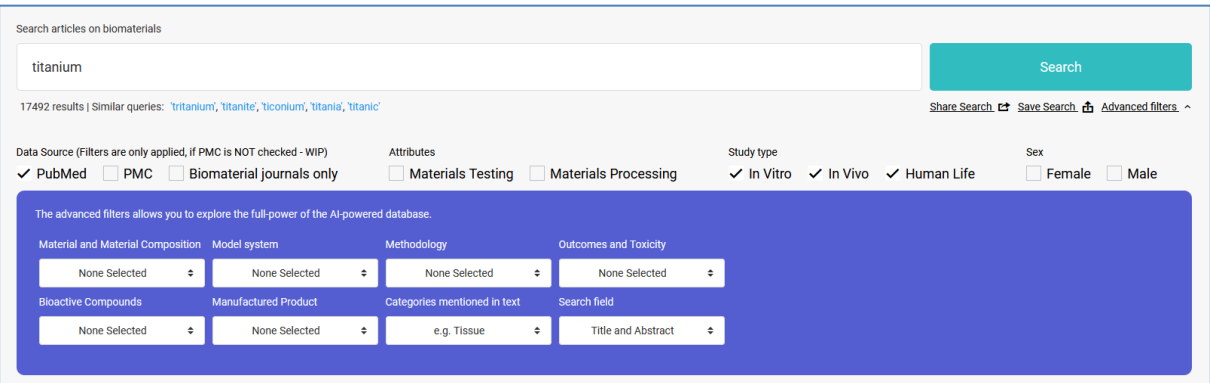


Figure 8. Overview of the possible filters that may be applied for advanced search

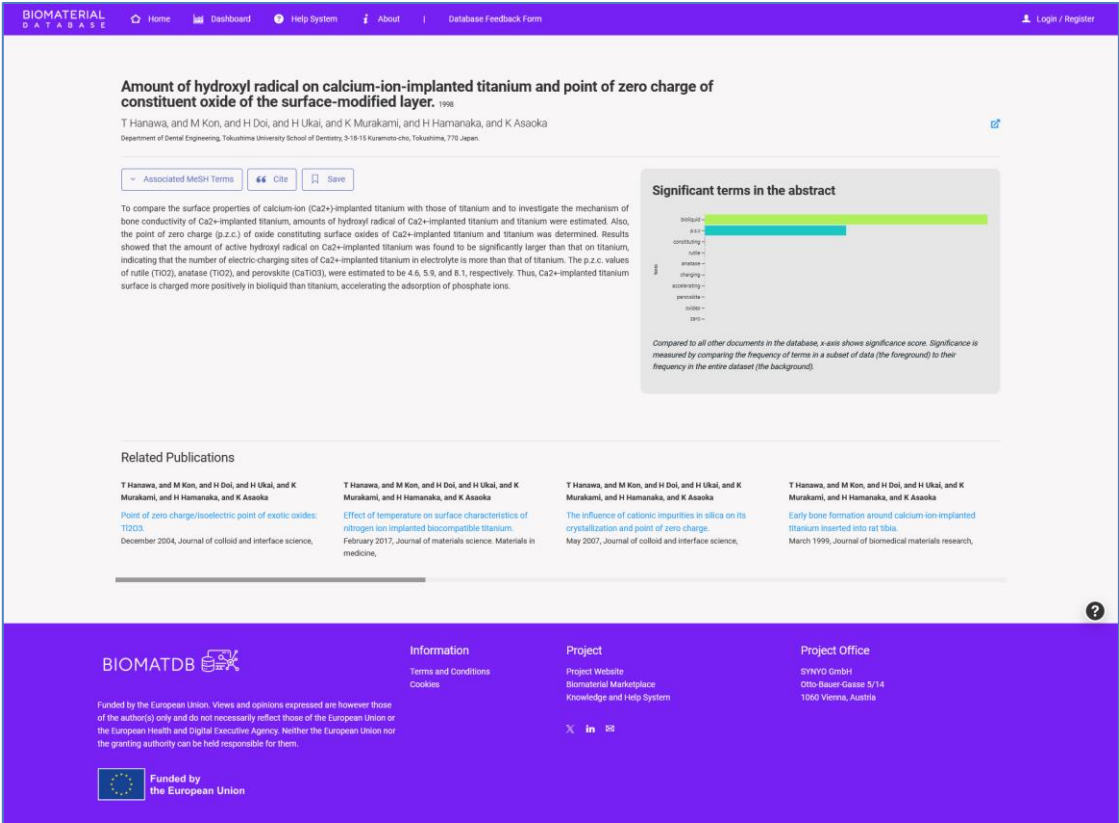


Figure 9. Publication detail page featuring visualisation & related publications

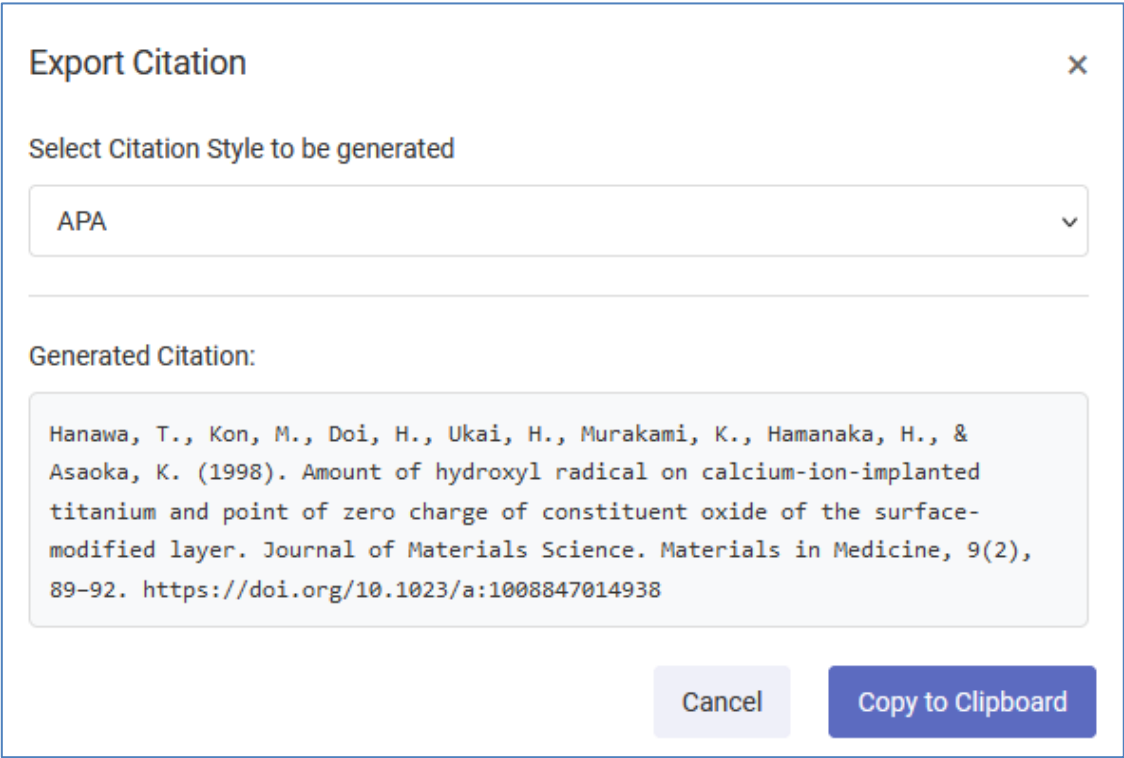


Figure 10. Citation export modality

Save Item To Your Collection

Collection Name

Your saved publications will be grouped by this name - think of it like a folder to group related publications and results.

☐

Use default name

Close

Save changes

Figure 11. User collection save modality

BIOMATERIAL
DATABASE

Home

Dashboard

Help System

About

Additional Resources

Database Feedback Form

AdminUser

My Searches

Manage your saved searches.

Search Query: dopamine AND cancer

View Search Results

Remove Search

Search ID: 48ba8bec784fb32196df53590fd9c375

Attributes

In Vivo: Yes

In Vitro: Yes

Additional Parameters

Sorting: _score (desc)

Page Size: 10

Search Field: All

Filters

MESH Categories and Terms

Search Query: titanium

View Search Results

Remove Search

Search ID: 496d1667b8dd058af49da0054046cd4e

Attributes

Additional Parameters

Sorting: _score (desc)

Page Size: 10

Search Field: All

Filters

MESH Categories and Terms

BIOMATDB

Funded by
the European Union

Information

Terms and Conditions

Cookies

Project

Project Website

Biomaterial Marketplace

Knowledge and Help System

Project Office

SYNIO GmbH

Otto-Bauer-Gasse 5/14

1060 Vienna, Austria

×

in

ss

?

Figure 12. Showcasing saved user searches

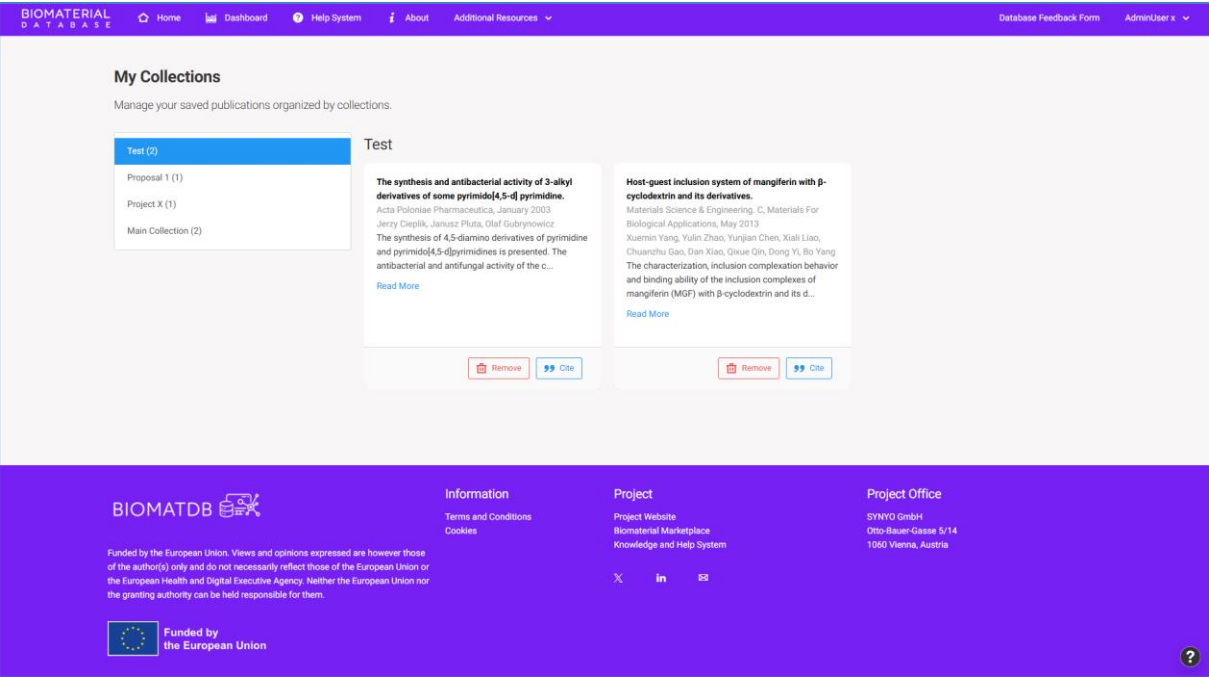


Figure 13. User collection - saved publications

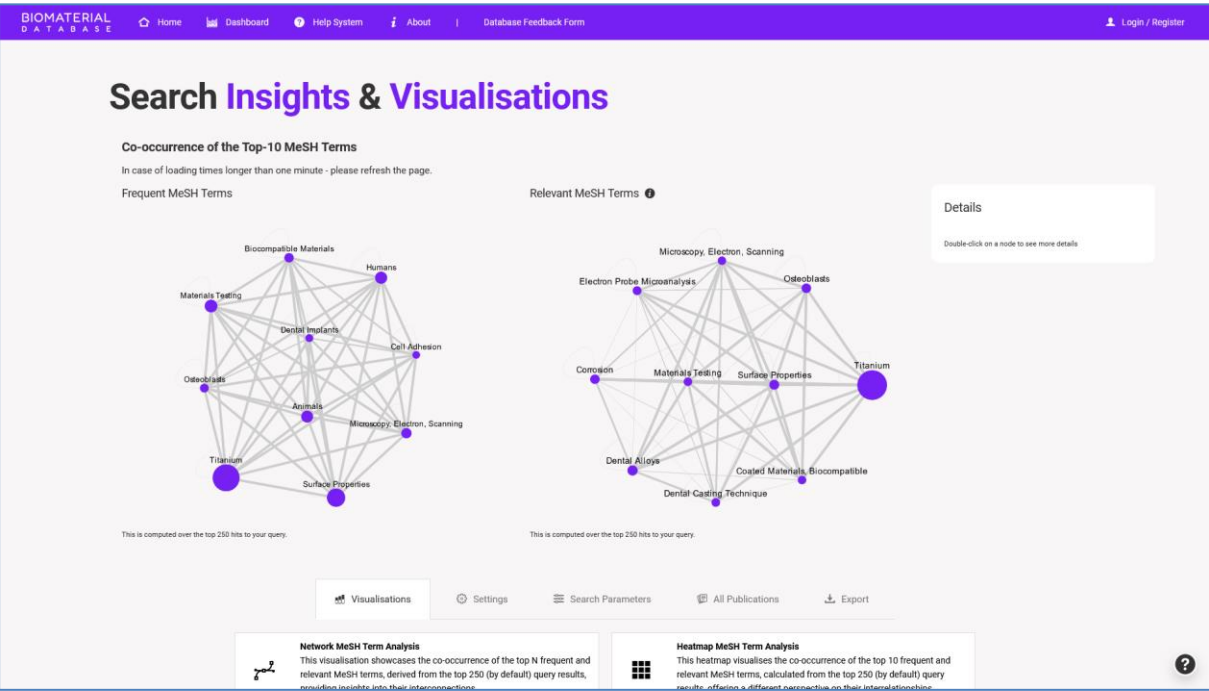


Figure 14. Search insights and visualisation space: Node-link graph of MeSH-term co-occurrence

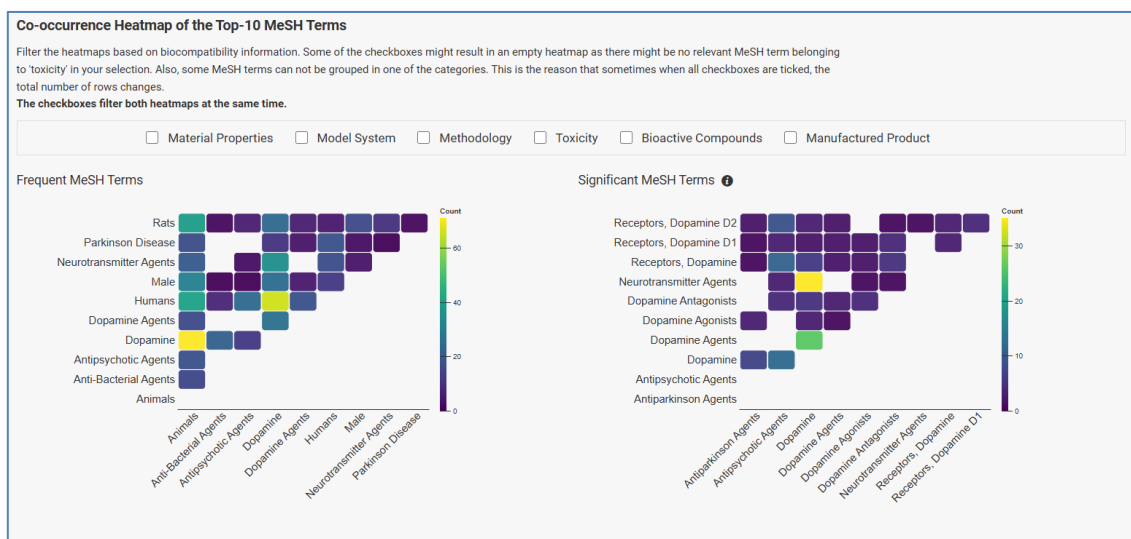


Figure 15. Search insights and visualisation space: heatmaps of MeSH-term co-occurrence

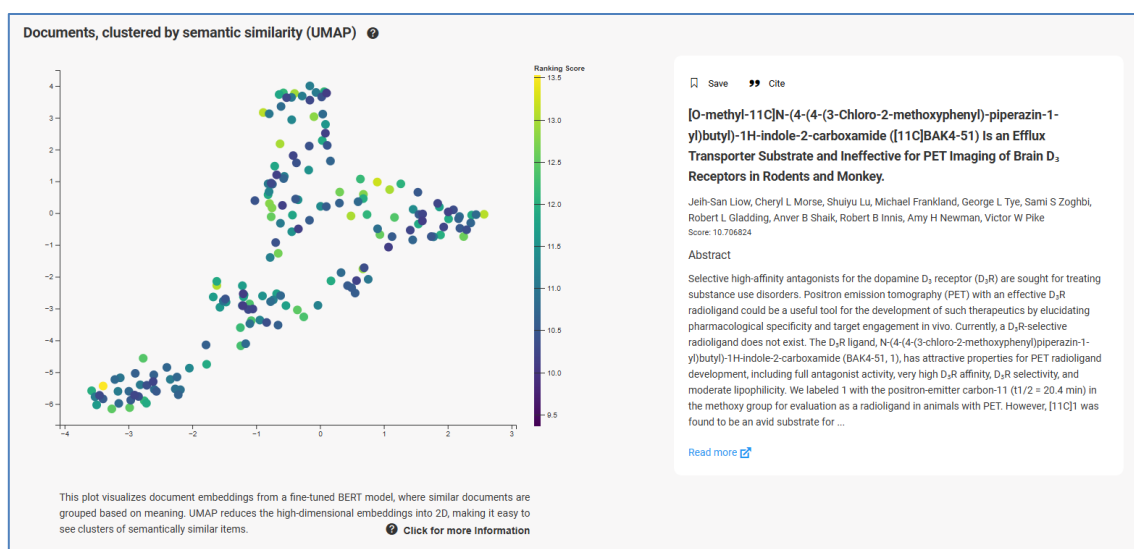


Figure 16. Search insights and visualisation space: embedding scatter plot of publications

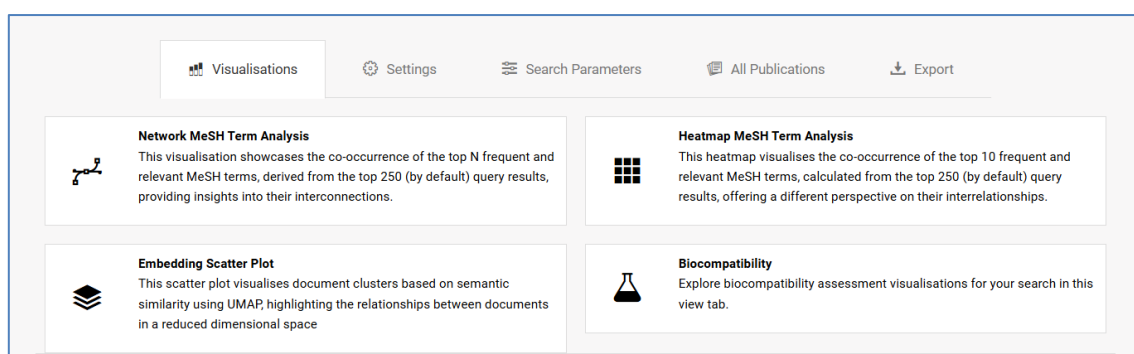


Figure 17. Search insights navigation tabs: Visualisation switcher

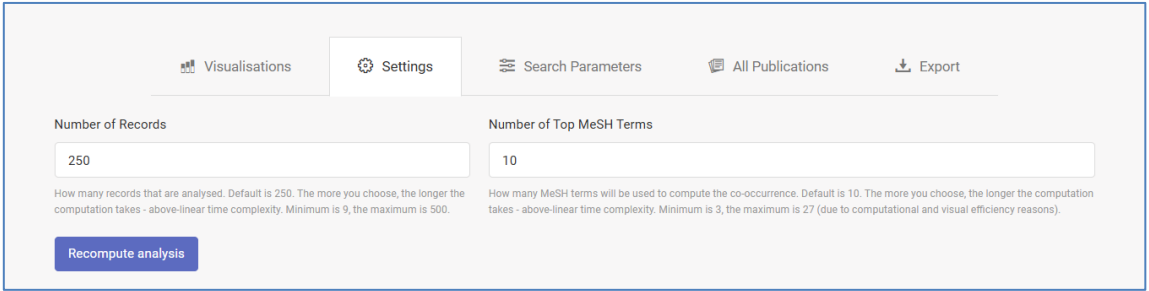


Figure 18. Navigation tabs: Settings

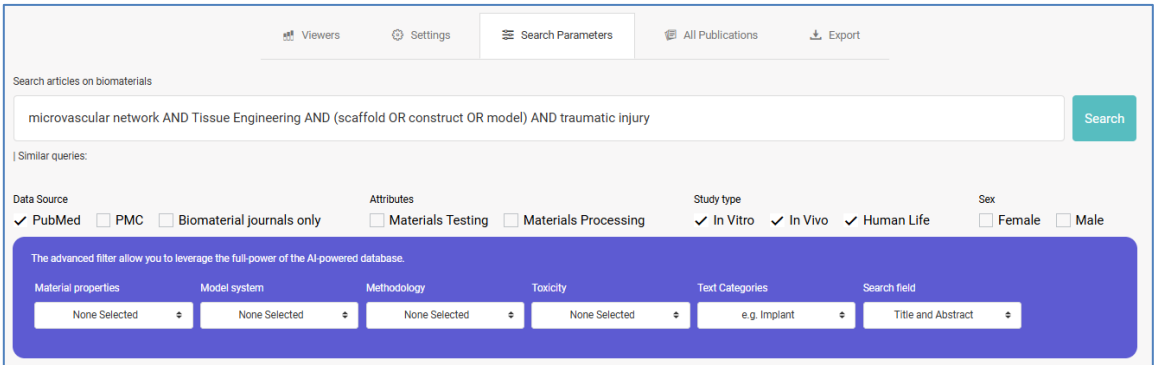


Figure 19. Navigation tabs: search parameters

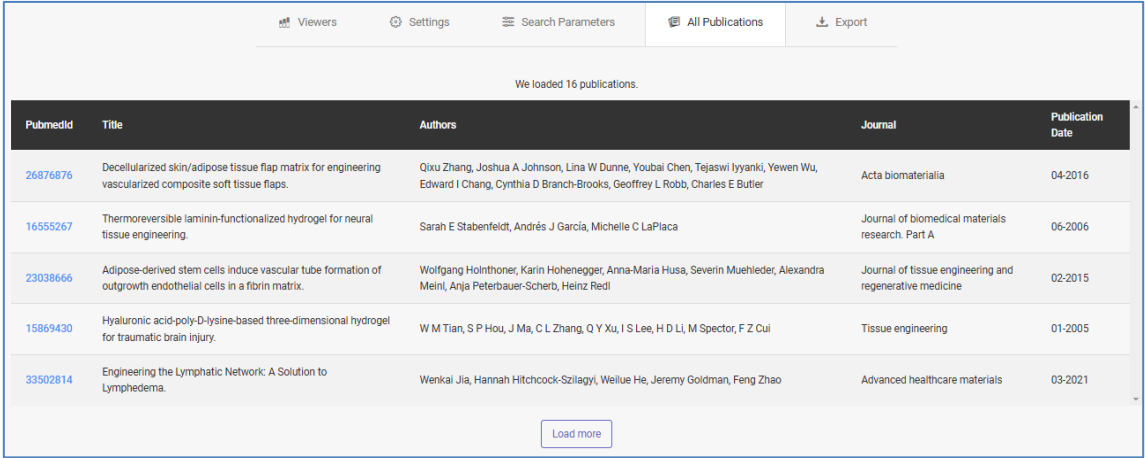


Figure 20. Navigation tabs: all publications

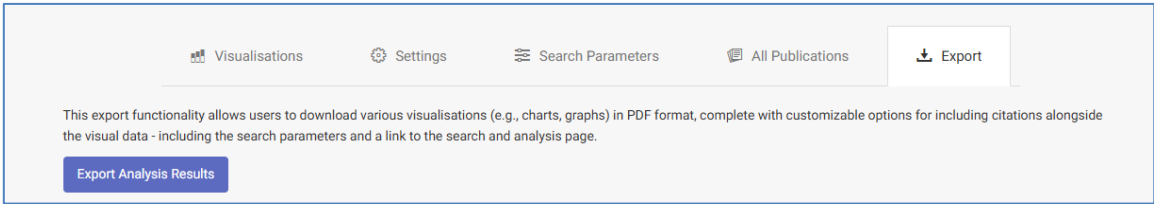


Figure 21. Navigation tabs: export

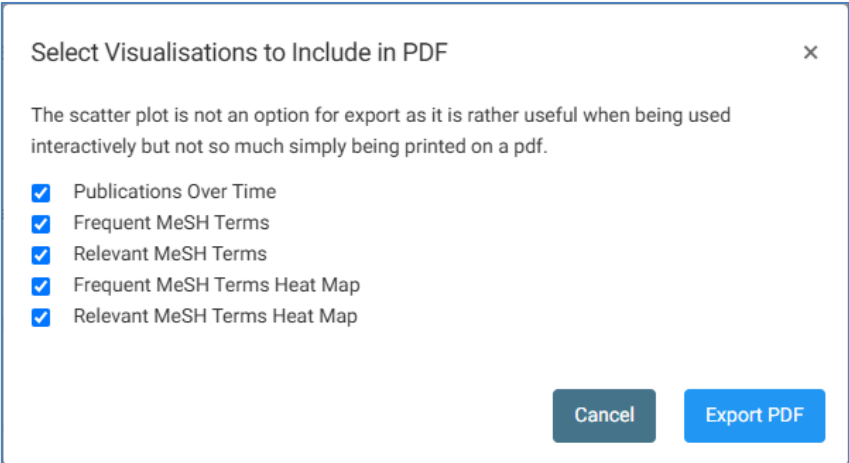


Figure 22. Export tab: customise export modality

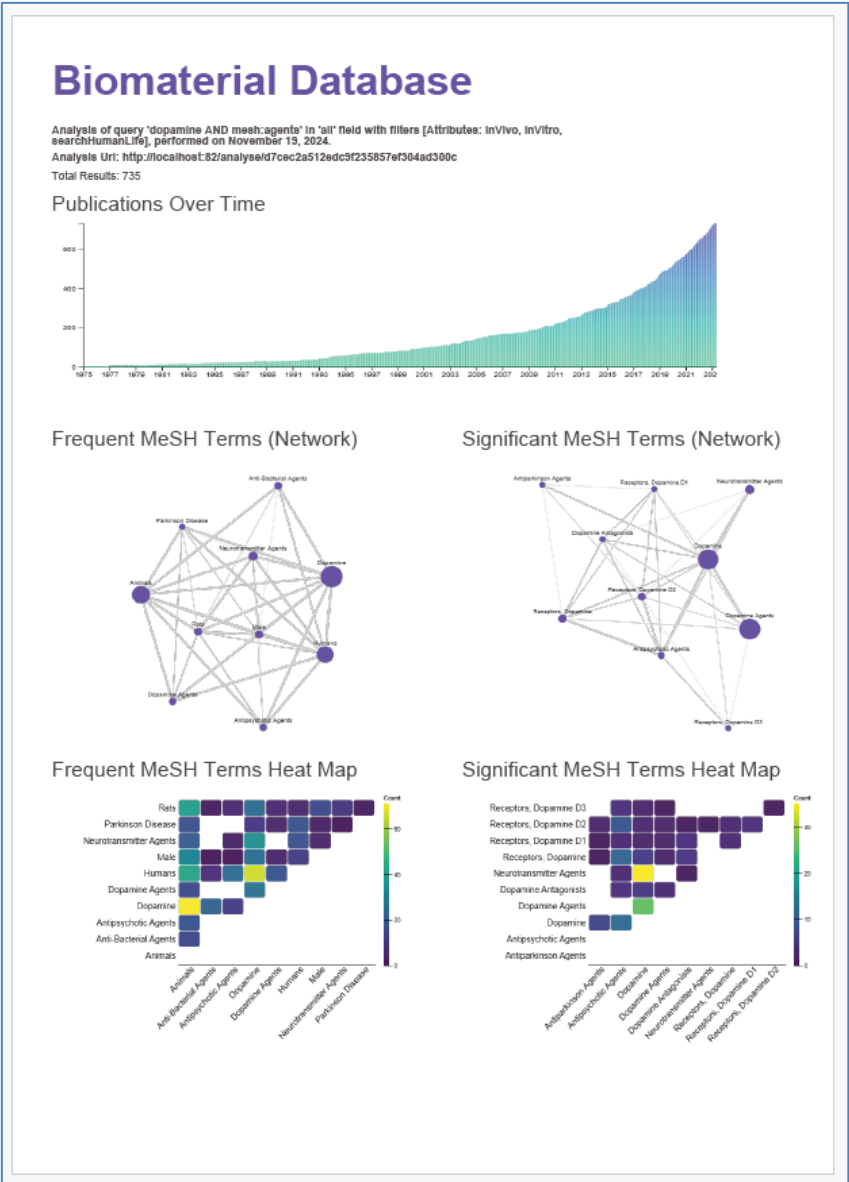


Figure 23. Example export report

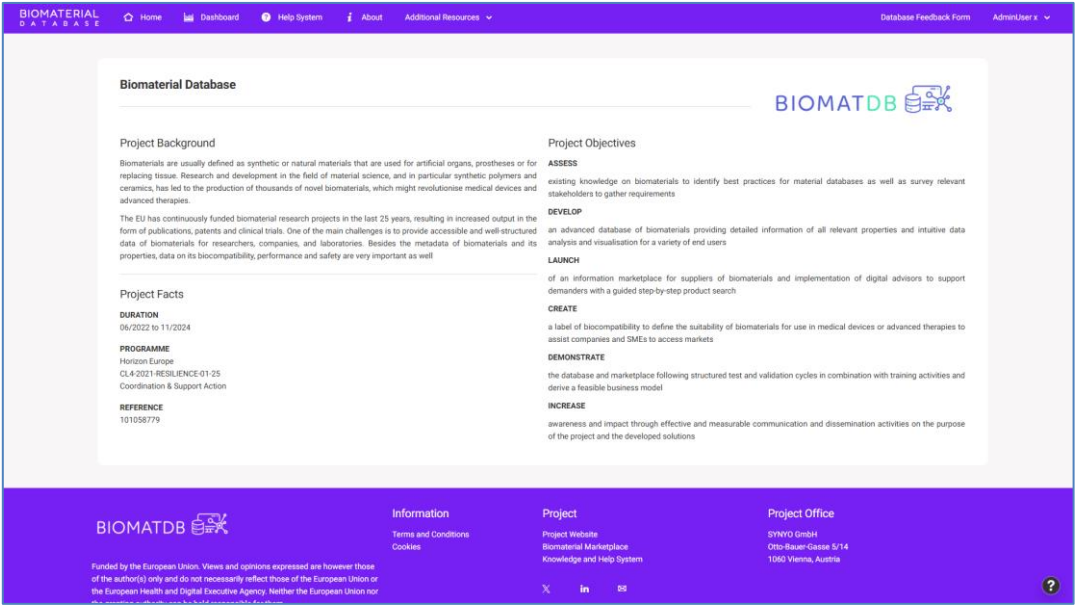


Figure 24. The current version of About page

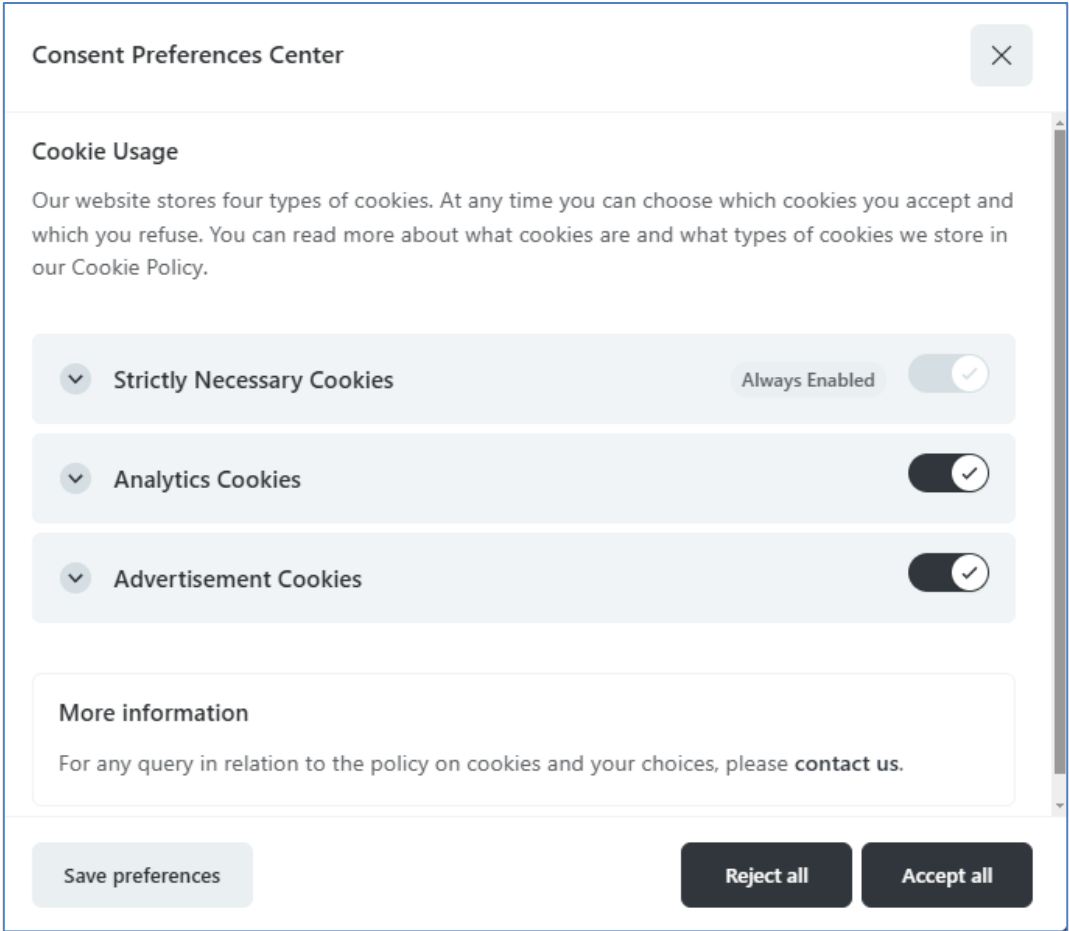


Figure 25. Cookie consent banner

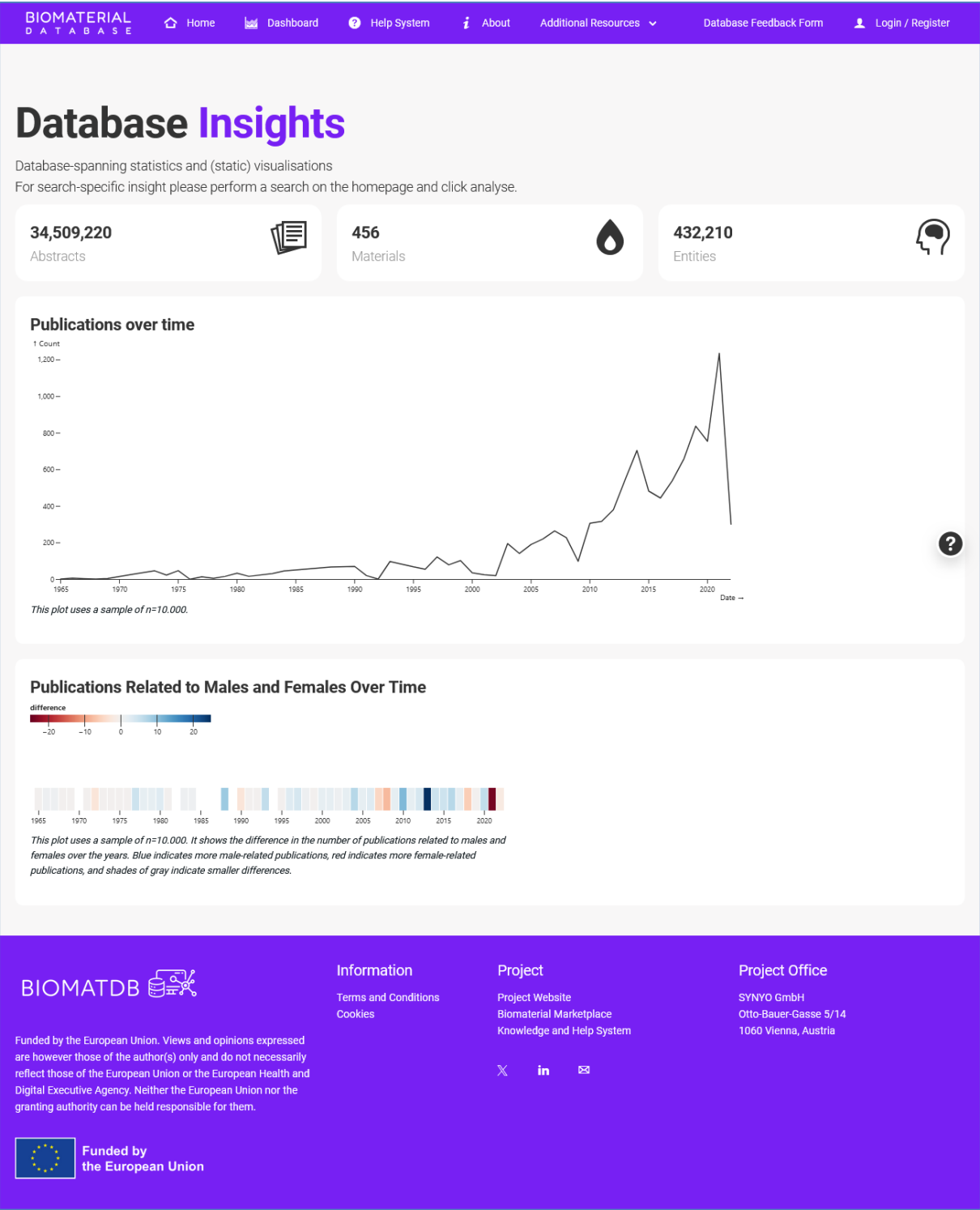


Figure 26. Static visualisations dashboard

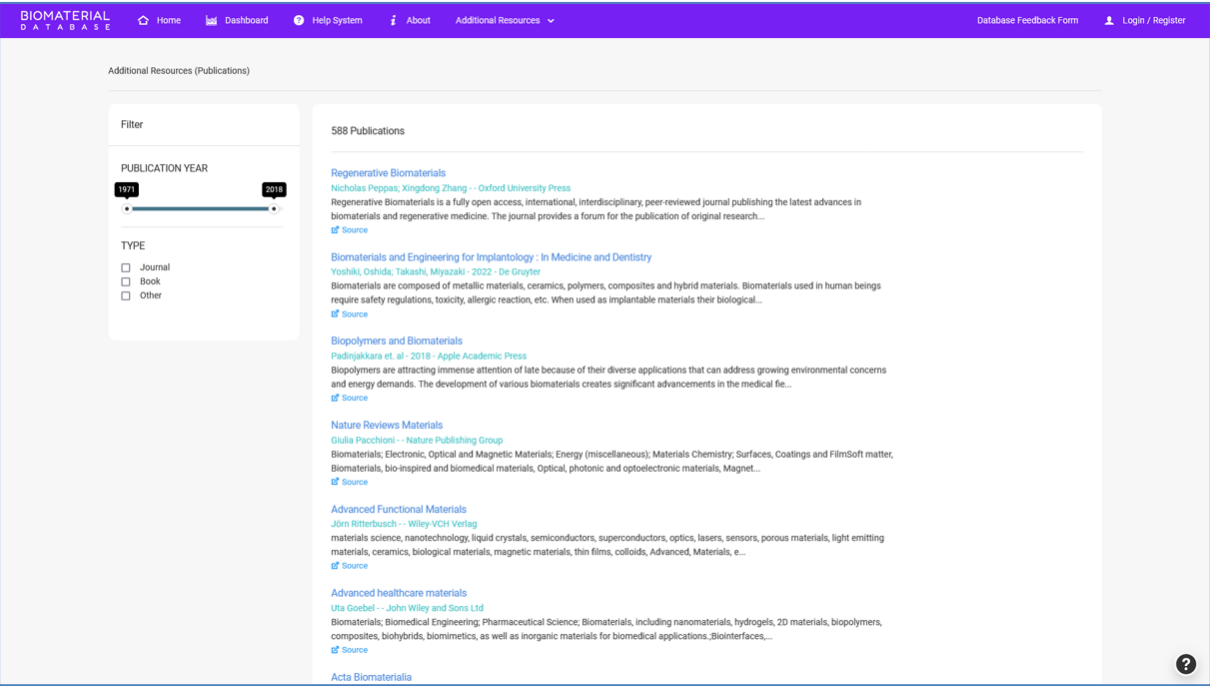


Figure 27. Additional Resources: literature

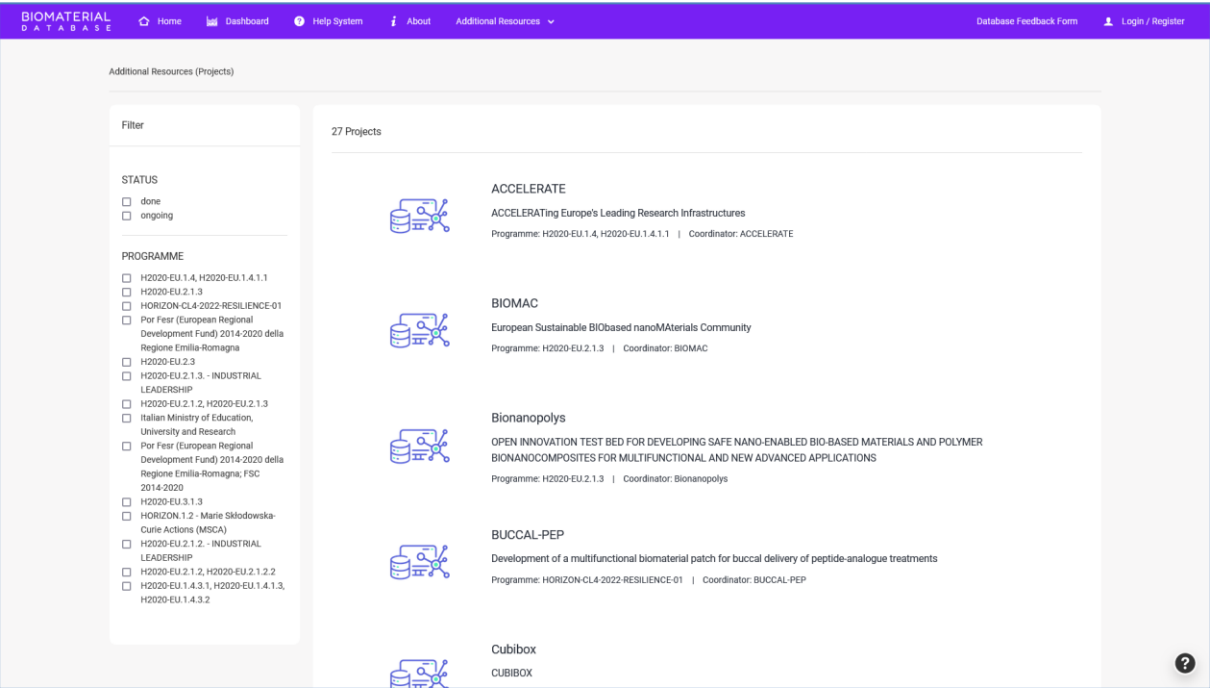


Figure 28. Additional Resources: projects

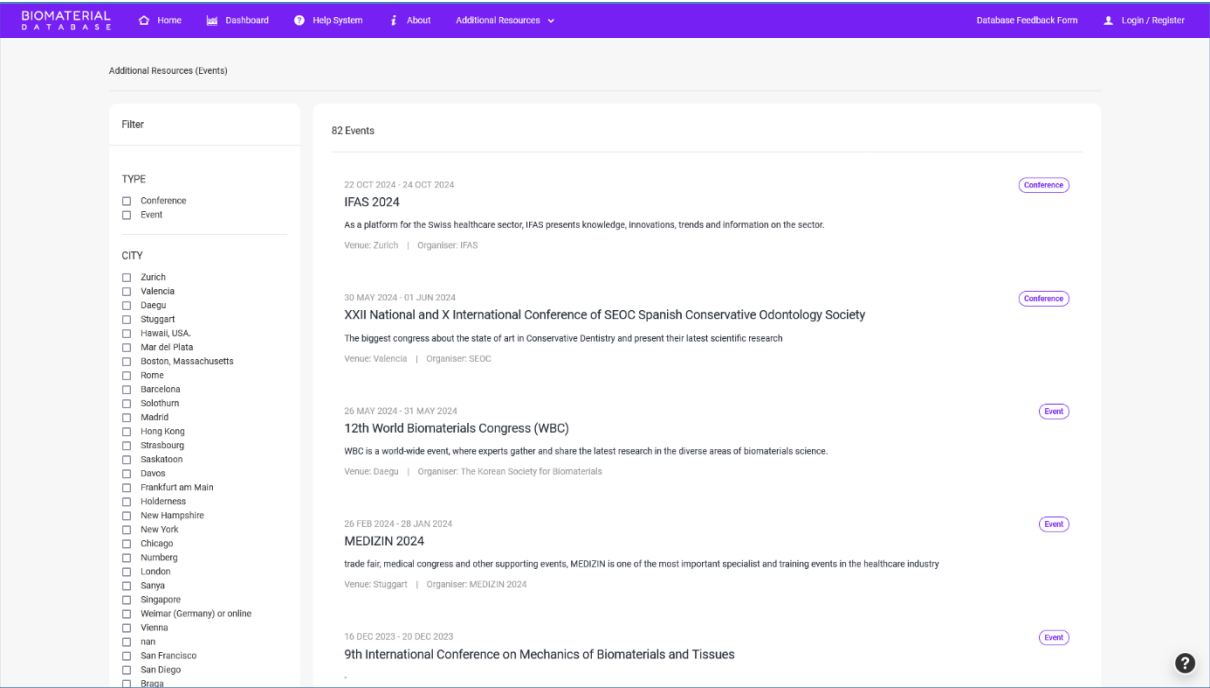


Figure 29. Additional Resources: events

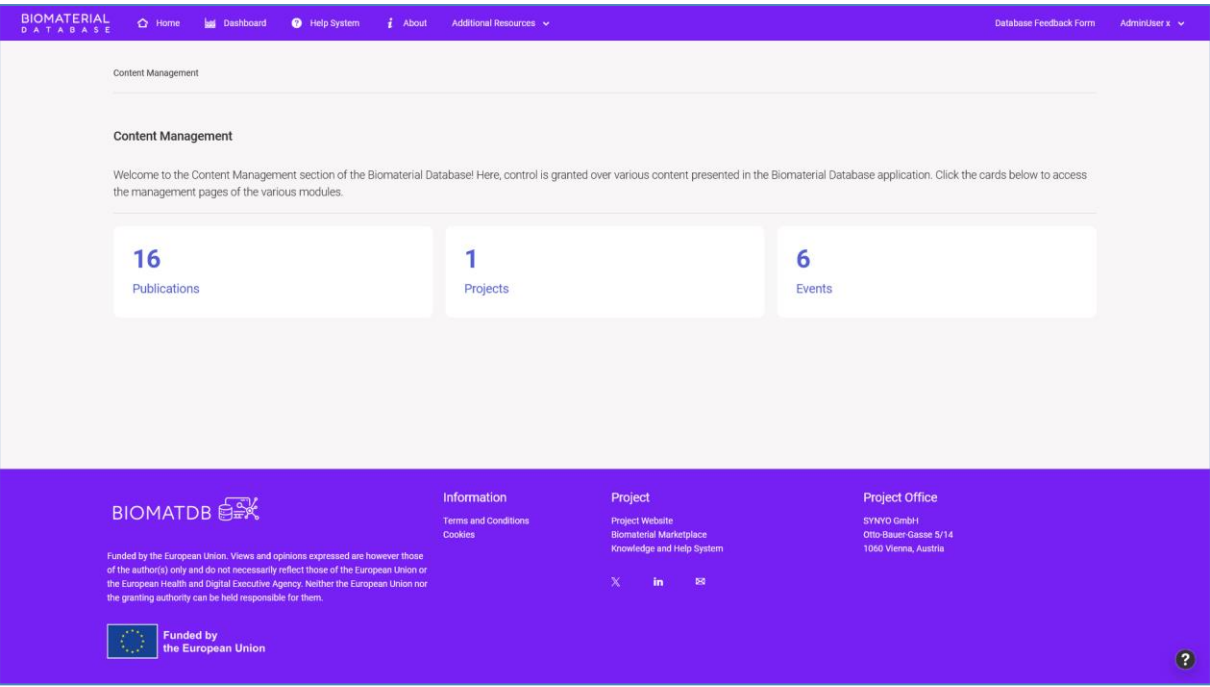


Figure 30. Additional Resources: content management

BIOMATERIAL
DATABASE

[Home](#)[Dashboard](#)[Help System](#)[About](#)[Additional Resources](#)

[Database Feedback Form](#)[AdminUser x](#)

Content Management

Publications

Edit Publication (Molestias autem et accusamus quisquam deserunt accusantium nobis repellat ad)

EDIT PUBLICATION

Title *

Molestias autem et accusamus quisquam deserunt accusantium nobis repellat ad

Sub Title

Description

Paragraph

B*I*

Quasi aliquid est consequatur velit ab occaecati et sequi in consequuntur sint incidunt qui et quia animi non sint eaque optio voluptatem quisquam aut perspicatis eveniet et est vel dolor culpa corrupti omnis dolores reiciendis dicta id laborum natus non explicabo omnis nobis nihil tempore molestias quia laudantium non pariatur quo soluta beatae doloribus neque modi voluptatem atque consequatur minima ipsum recusandae magni sit rerum rerum nulla deleniti maxime repellat accusamus fuga sit nihil recusandae occaecati omnis minima eos quia a dignissimos eum nam expedita modi autem molestias laboriosam dolorum velit illum necessitatibus omnis occaecati quae nihil deserunt porro sequi omnis est amet facere cum illum inventore recusandae porro consequuntur ipsam amet hic esse qui sunt accusamus et impedit cum odit eos sint est quas expedita ratione amet quo tempora hic beatae labore voluptate quia ratione et aliquid et quia autem eum quia sunt omnis odio aut omnis sit et recusandae qui nihil qui molestias vitae vel consequuntur nulla in cupiditate perspicatis sequi quas et veniam quis.

Year of Publication *

1976

Language

Authors

Publisher

Quae

Figure 31. Figure 27. Additional Resources: editing content

BIOMATERIAL
DATABASE

[Home](#)[Dashboard](#)[Help System](#)[About](#)[Additional Resources](#)

[Database Feedback Form](#)[AdminUser x](#)

User Management

User Management

+ Create

Show 10 entries

Search

ID	Name	Role	Actions
3	AdminUser x	ADMIN	EditDelete
4	StandardUser	STANDARD	EditDelete
5	Jakob	STANDARD	EditDelete
6	Tilman	STANDARD	EditDelete

Showing 1 to 4 of 4 entries

Previous1Next

BIOMATDB

Funded by the European Union

Information

Terms and Conditions

Cookies

Project

Project Website

Biomedical Marketplace

Knowledge and Help System

Project Office

SYNTO GmbH

Orto-Bauer-Gasse 5/14

1060 Vienna, Austria

?

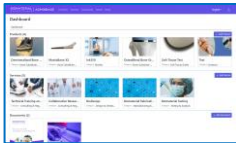
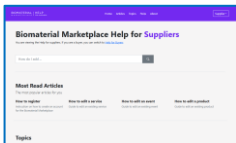
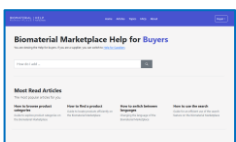
Figure 32. User- and role management

3 Biomaterial Marketplace

The frontend and backend components for the Biomaterial Marketplace are all up and running at this stage. The current versions are available on the corresponding live servers and will be improved based on steady evaluation. The advisors are yet to be deployed to the live server and are only available on the development server at this stage.

The following four interfaces have been developed within the Biomaterial Marketplace environment:

Table 5. Biomaterial Marketplace Interfaces

Interface	Screenshot	URL
Administration Panel		biomaterialmarketplace.adminbase.com
Biomaterial Marketplace (Frontend)		biomaterialmarketplace.com
Help for Suppliers		help.biomaterialmarketplace.com?filter=supplier
Help for Buyers		help.biomaterialmarketplace.com?filter=buyer
Advisors		advisors.biomaterialmarketplace.com

In some cases, the provided screenshots in sections 3.1, 3.2 and 3.3 and Table 5 above include sample content from the development version instead of the live version for a better demonstration of current stage of developments. As already mentioned, the Biomaterial Marketplace Help was already demonstrated in a previous deliverable (D4.5) and is therefore not showcased in detail in this deliverable.

3.1 Administration Panel

This section aims to demonstrate the development of the administration panel for suppliers (Admin-Base) in the form of screenshots. Before the visual demonstrations, a short overview of the most significant improvements during the recent development phase is provided in Table 6.

Table 6. Main Improvements Administration Panel

Feature/Improvement	Description
Translations	Suppliers have the option to provide their content for added products, services, news and events in all supported languages (English, German, Spanish, French and Italian) via new implemented translation pages. A demonstration of the product translation page can be seen in Figure 36.
Product Specifications	Additional information can now be provided for products by entering specifications on the add/edit page of a product. The available specifications depend on the selected product category. Some of the specifications have pre-defined dropdown options while others have open text fields. All specifications are optional and not required to be filled by the suppliers to add a product. Figure 37 demonstrates the specifications fields when adding a product for the category “Implants”.
Biocompatibility-related Information	Another notable newly implemented feature is the “biocompatibility-related information” for products. This allows the supplier to add labels (e.g., CE, UKCA) and risk classes (e.g., MDR EU, FDA) to their products. Additionally, it can be indicated in which countries a product is already approved as medical devices, or an approval procedure is currently in progress. This newly added section can be seen in Figure 38.
Certifications	Now the administration panel also provides the option for suppliers to add certain ISO certifications to their profile. The available certifications are ISO/IEC 17025, ISO 13485, ISO 14001 and ISO 9001.

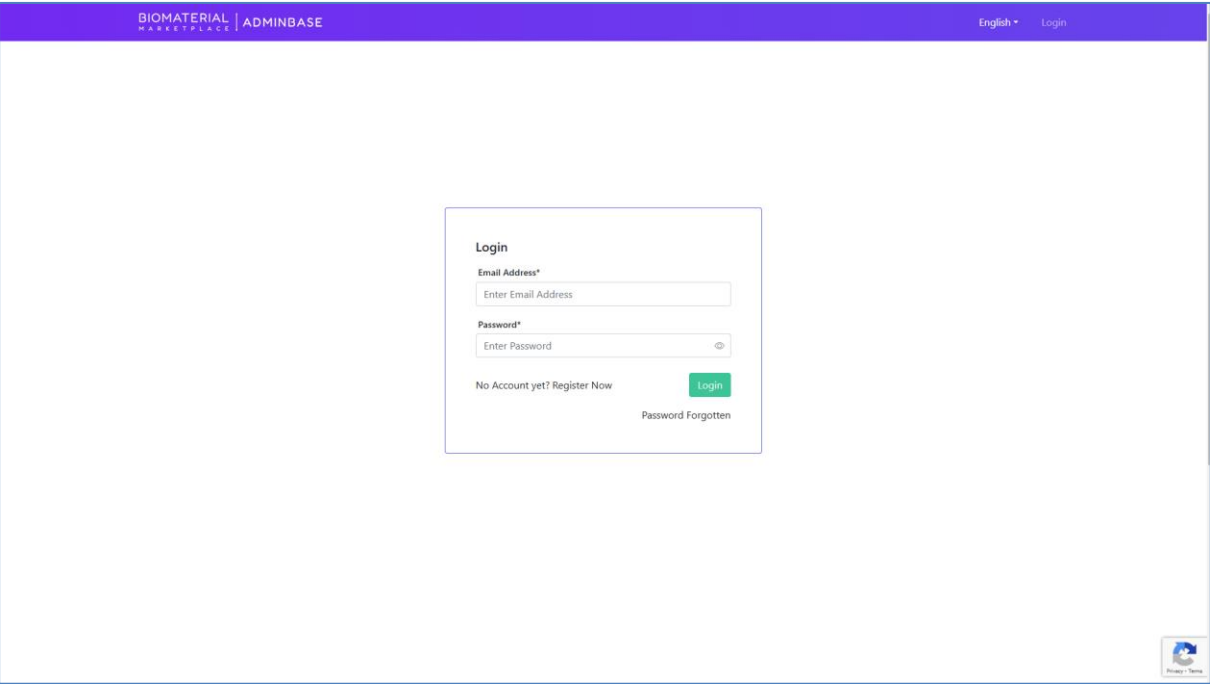


Figure 33. Login Page (AdminBase)

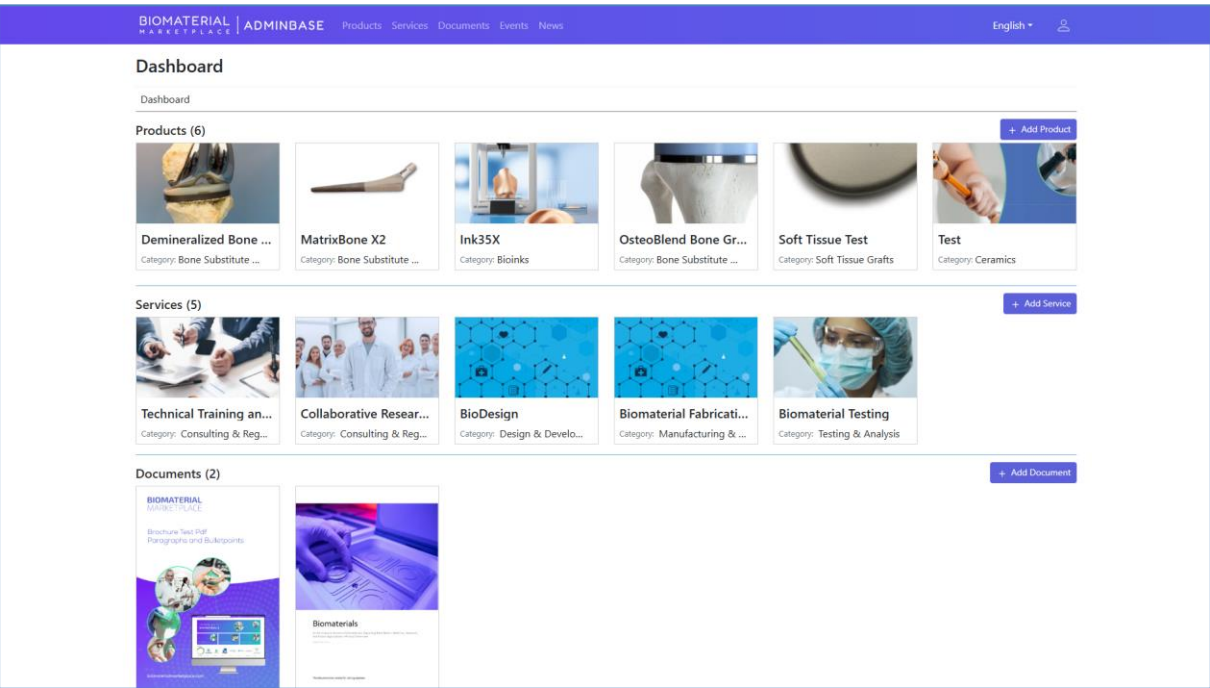


Figure 34. Dashboard (AdminBase)

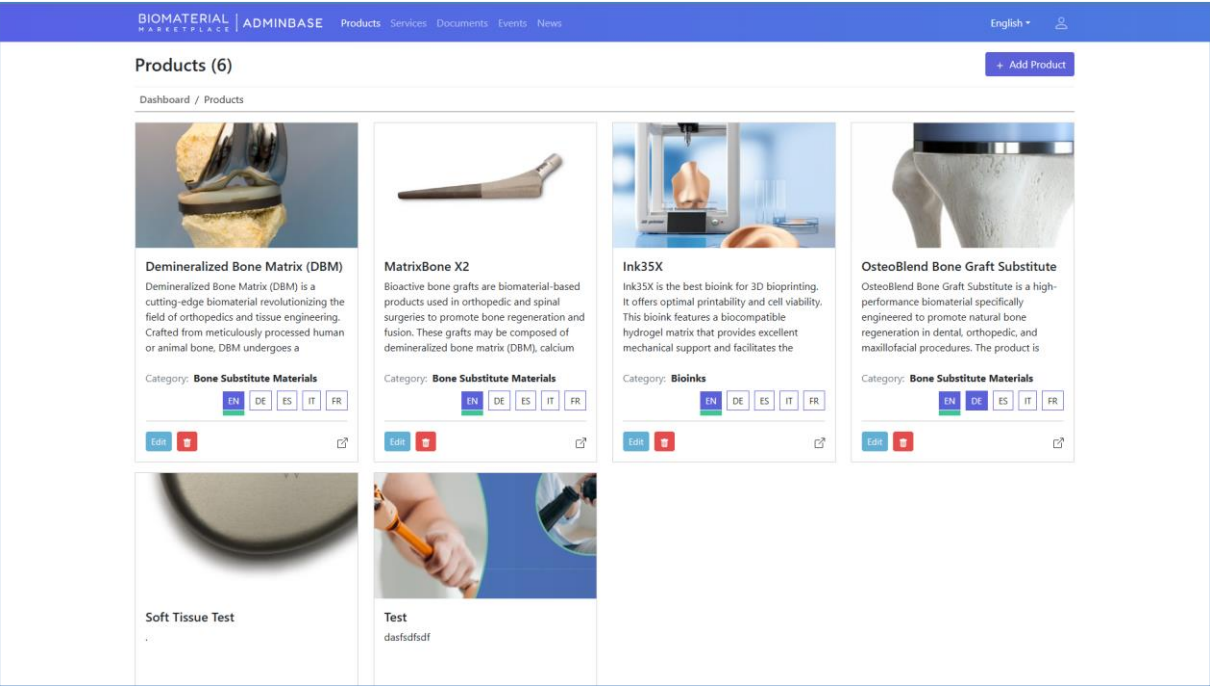


Figure 35. Product Overview (AdminBase)

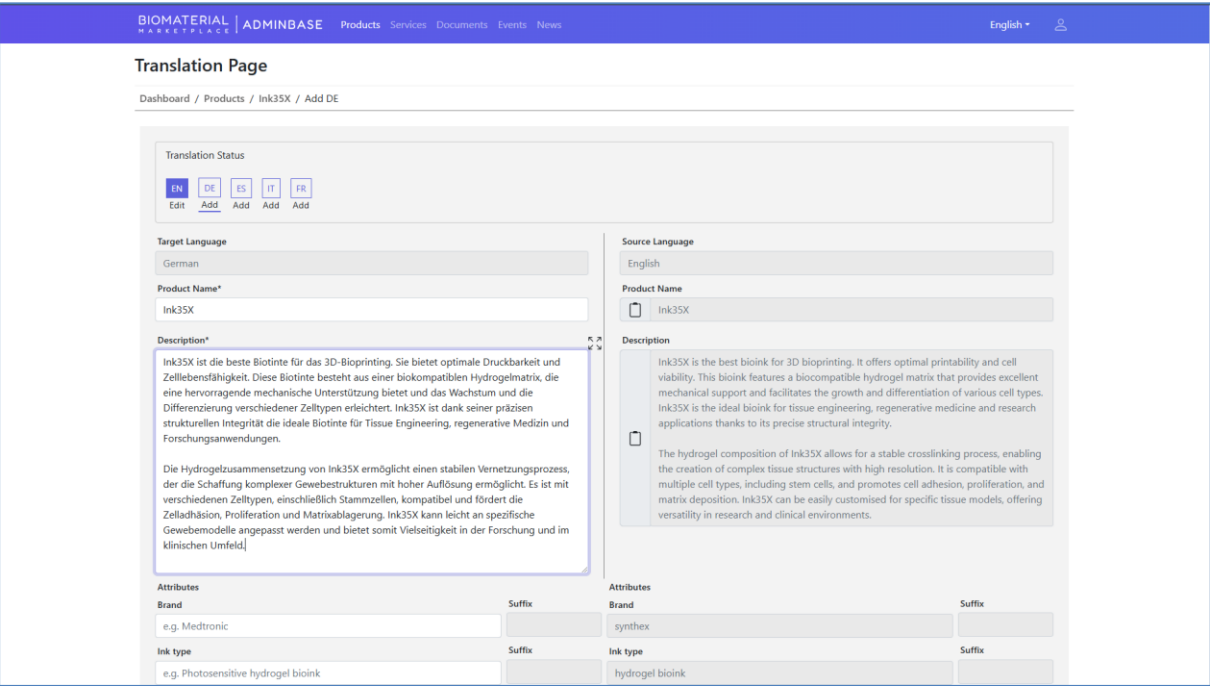


Figure 36. Translation Page (AdminBase)

BIOMATERIAL
MARKETPLACE

ADMINBASE

Products

Services

Documents

Events

News

English

Add Product

Dashboard / Products / Add

Product Name*

Biomaterial Product

Product Category*

Implants

Specifications

Dimensions

e.g. 99.99

Suffix

mm

Materials

e.g. Polymer

Suffix

Price

e.g. 99.99

Suffix

Applications

e.g. Dental

Suffix

Colour

e.g. White

Suffix

Weight

e.g. 150

Suffix

g

Coating

e.g. Antimicrobial

Suffix

Volume

e.g. 100

Suffix

ml

Shelf life

Suffix

Figure 37. Product Form – specifications (AdminBase)

Biocompatibility-related Information

Labels

☒ CE

☒ UKCA

☐ Other

Medical Device Registration

Registration Countries

Austria

Status

In Progress

Approved

Spain

In Progress

Approved

Italy

In Progress

Approved

Registration Risk Classes

MDR EU

I

IIa

IIb

III

FDA

I

II

III

Description*

Enter Description

Product Image*

+ Add

Publish

☒ Mark as Published

Save

Figure 38. Product Form – biocompatibility (AdminBase)

BIOMATERIAL
MARKETPLACE

ADMINBASE

Products Services Documents Events News

English

Dashboard / Services / Add

Service Name*

Biomaterial Service

Service Category*

Design & Development

Price Units

Hourly

Fixed Price

Start Price

End Price

Daily

Fixed Price

Start Price

End Price

Weekly

Fixed Price

Start Price

End Price

Monthly

Fixed Price

Start Price

End Price

Flat Rate

Fixed Price

Start Price

End Price

Currency*

EUR

Description*

Figure 39. Service Form (AdminBase)

BIOMATERIAL
MARKETPLACE

ADMINBASE

Products Services Documents Events News

English

Dashboard / Documents / Add

Document Name*

Enter Document Name

Type*

Select...

Year of Publication*

Enter Year of Publication

Document Language*

Select...

Upload Document*

Choose File

No file chosen

Publish

☒ Mark as Published

Save

Figure 40. Document Form (AdminBase)

BIOMATERIAL
MARKETPLACE

ADMINBASE

Products Services Documents Events News

English

Dashboard / Events / Add

Event Name*

Enter Event Name

Type*

Select...

Start Date*

19.11.2024

Start Time*

Enter Start Time

End Date*

19.11.2024

End Time*

Enter End Time

Indoor/Outdoor*

Select...

Description*

Enter Description

Target Group

Enter Target Group

Organiser Info

Enter Organiser Info

Country*

Select...

Figure 41. Event Form (AdminBase)

BIOMATERIAL
MARKETPLACE

ADMINBASE

Products Services Documents Events News

English

Dashboard / News / Add

Headline*

Enter Headline

Type*

Select...

Content*

↶ ↷

B *I*

Paragraph

↶ ↷

🔗

🔗

🔗

News Image*

+ Add

Publish

☒ Mark as Published

Figure 42. News Form (AdminBase)

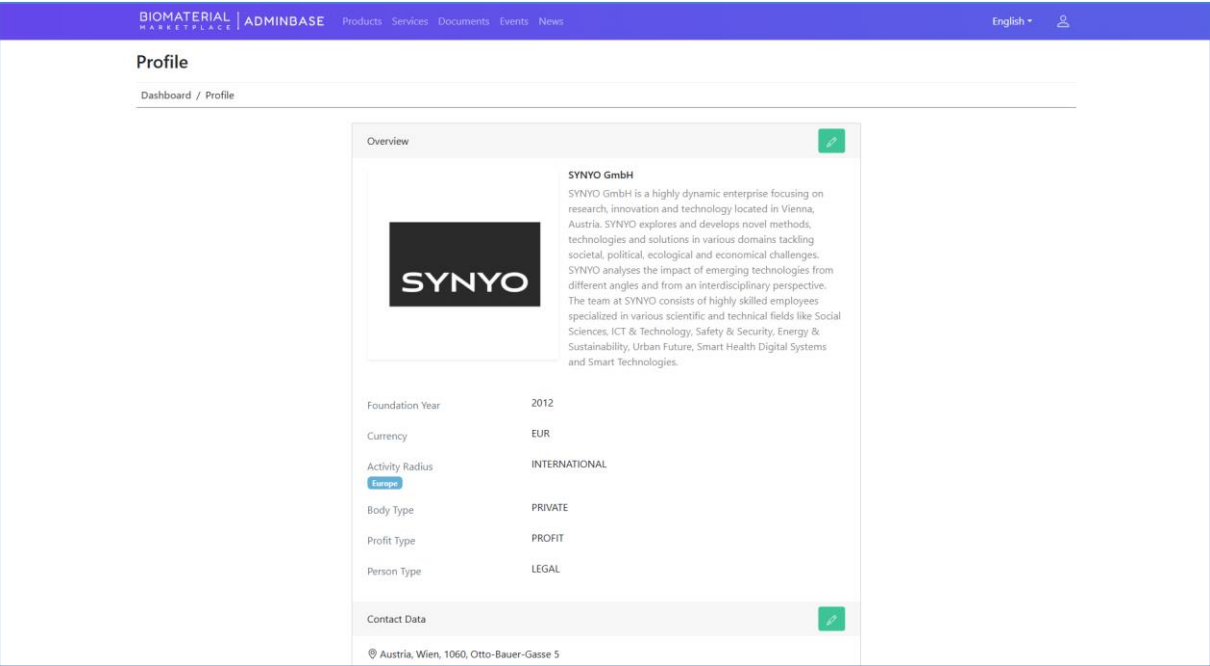


Figure 43. Organisation Profile - general (AdminBase)

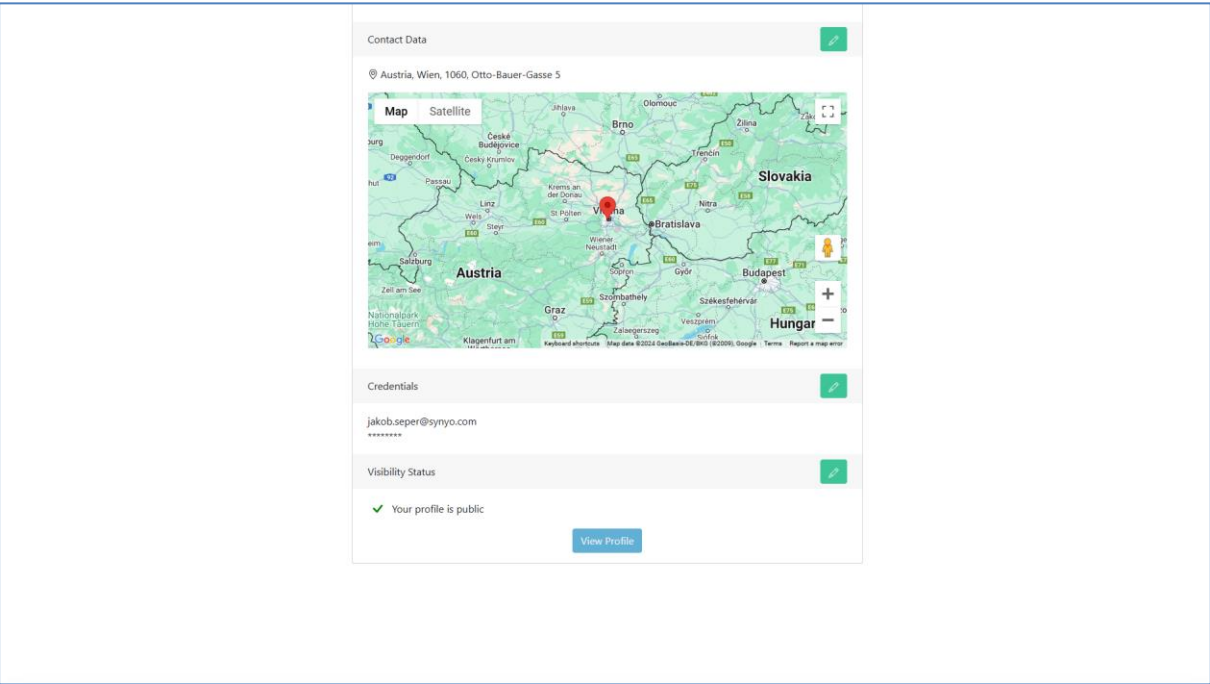


Figure 44. Organisation Profile – address, Credentials and Visibility (AdminBase)

3.2 Frontend

The frontend of the Biomaterial Marketplace was improved by multiple new features and design adaptations within the recent development phase. The most notable ones are described in brief in Table 7 below.

Table 7. Main Improvements Frontend

Feature/Improvement	Description
Translatable Banners	Considering the multiple languages available on the Biomaterial Marketplace, the banners displayed on the front page can now be translated. In contrast to the previous versions, which employed simple images, the text is now rendered as a standalone element and overlaid above the image. When changing the language, the banner text is also translated. This is demonstrated in Figure 45 and Figure 46, where the front banners are shown in English and German.
Redesigned Product Page	The product page underwent several iterations leading to significant improvements. It now integrates product specifications, medical device labels and information regarding the supplier, including certain ISO certifications. To present the available information in the most efficient manner, a three-column layout is now employed for this page. The redesigned product page is illustrated in Figure 50.
Product Comparison	The product comparison is a recently introduced feature on the Biomaterial Marketplace. It has been added based on user testing and feedback from partners. It allows users to add products to a comparison list and compare them based on their specifications. Additionally, users have the option to reorder the added products using a drag-and-drop interface. The added products are grouped by tabs according to their categories. An illustration of the product comparison can be found in Figure 51.
Favourite List	For the products and services modules, the users have now also the option to add entries to a favourite list. Since the Biomaterial Marketplace does not support profiles for frontend users at this stage, the favourite list is only stored locally via session cookies and is therefore not connected to any user. The feature is demonstrated in Figure 52.
Restructured Search	Improvements were also made in terms of the search result page. In the current version of the Biomaterial Marketplace, the search results are now split into tabs of the various modules (suppliers, products, services, documents, scenarios, events and news). Based on the relevance of the search, one of the module tabs is always preselected on the results page. The restructured search result page is demonstrated in Figure 63.

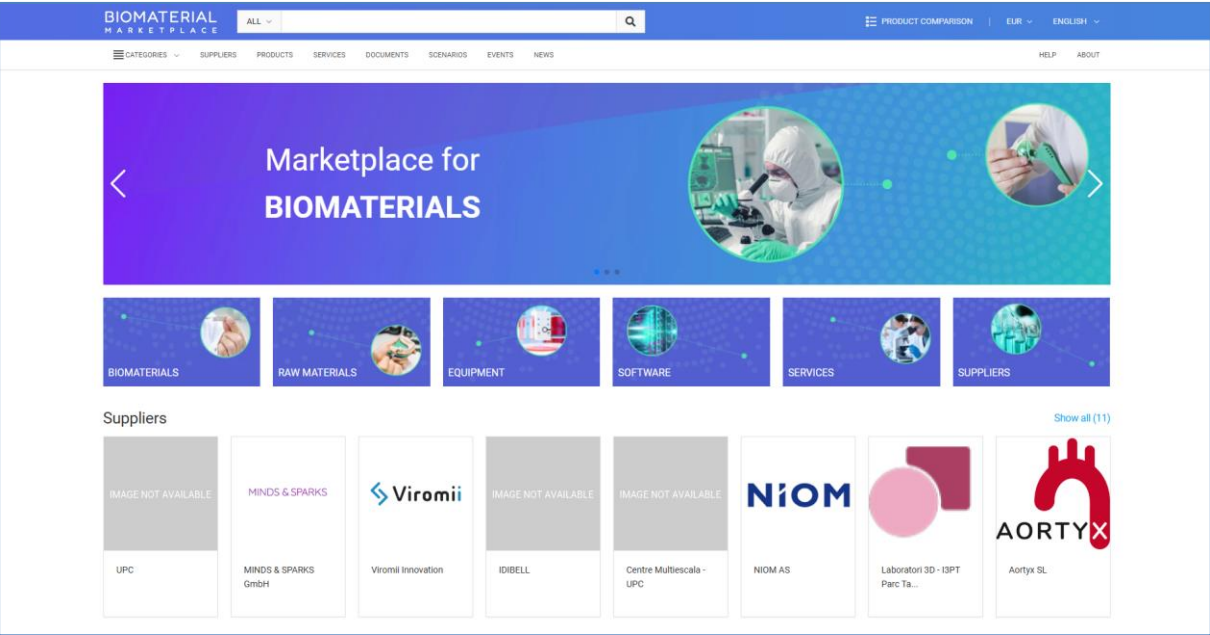


Figure 45. Front Page EN (Marketplace)

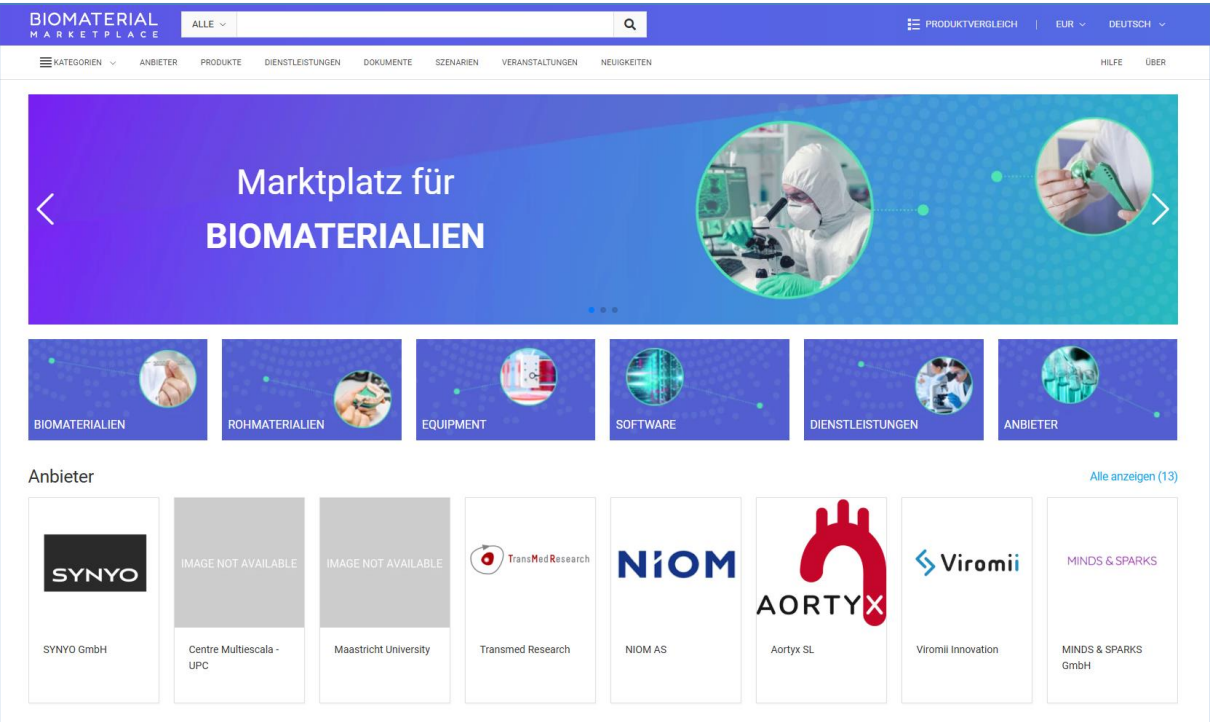


Figure 46. Front Page DE (Marketplace)

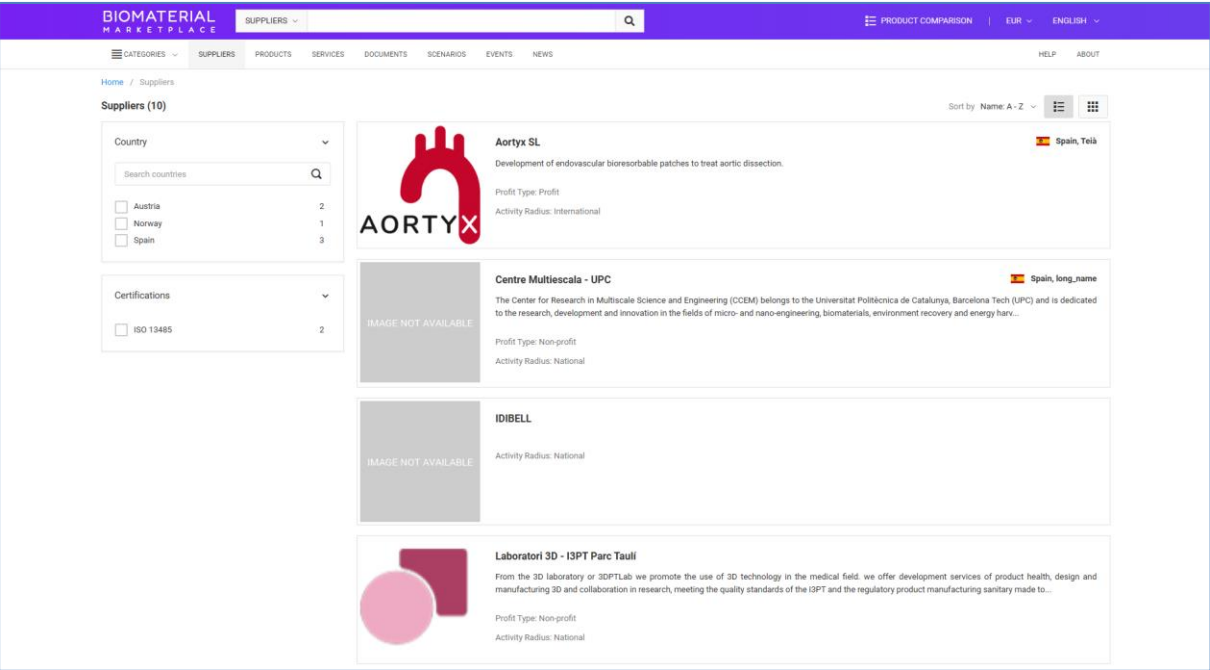


Figure 47. Supplier List (Marketplace)

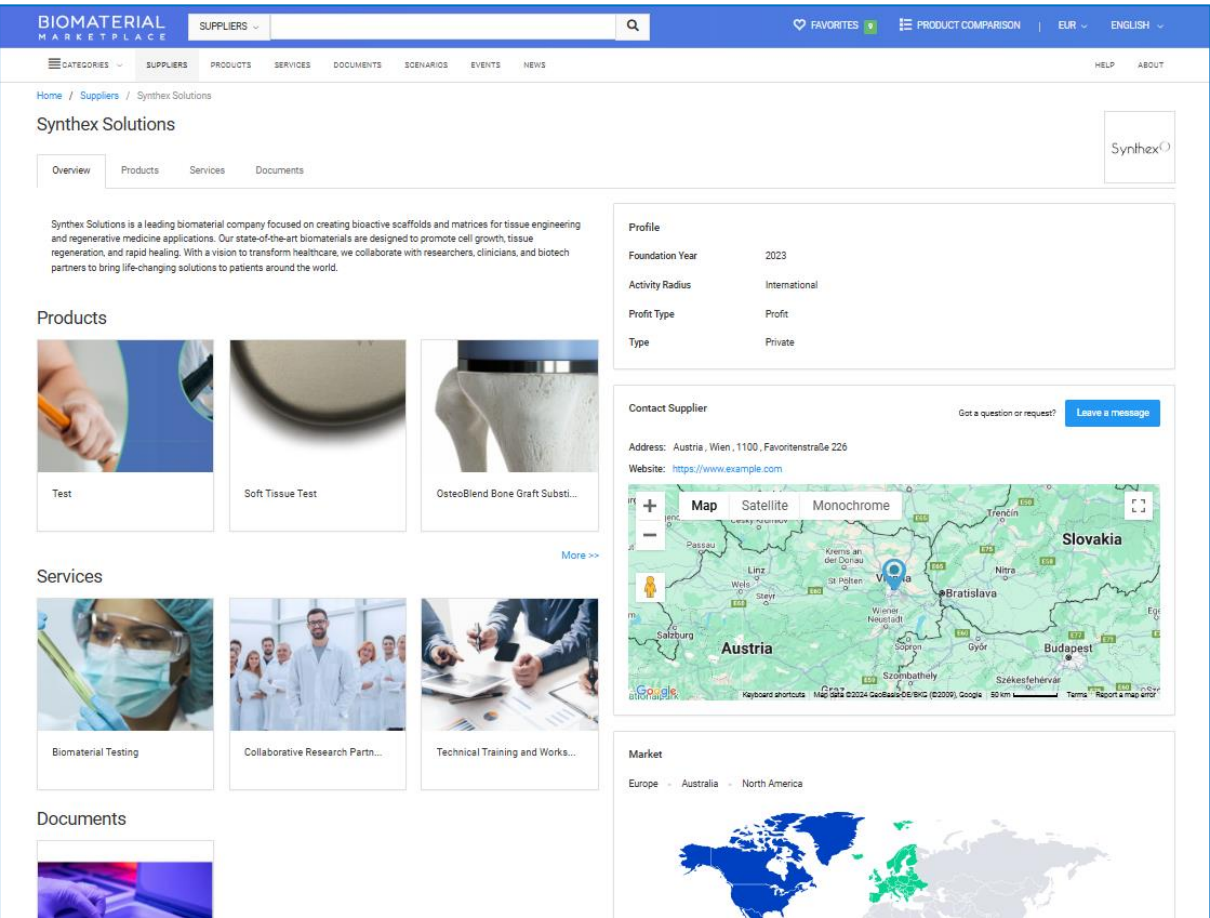


Figure 48. Supplier Detail Page (Marketplace)

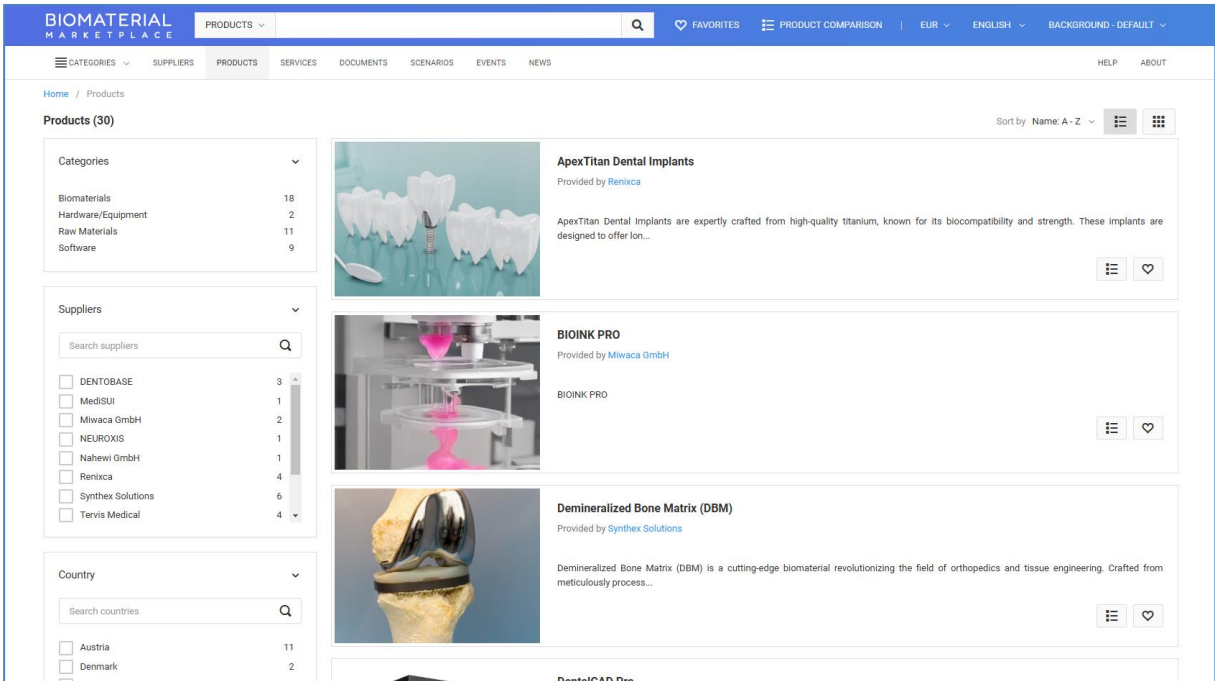


Figure 49. Product List (Marketplace)

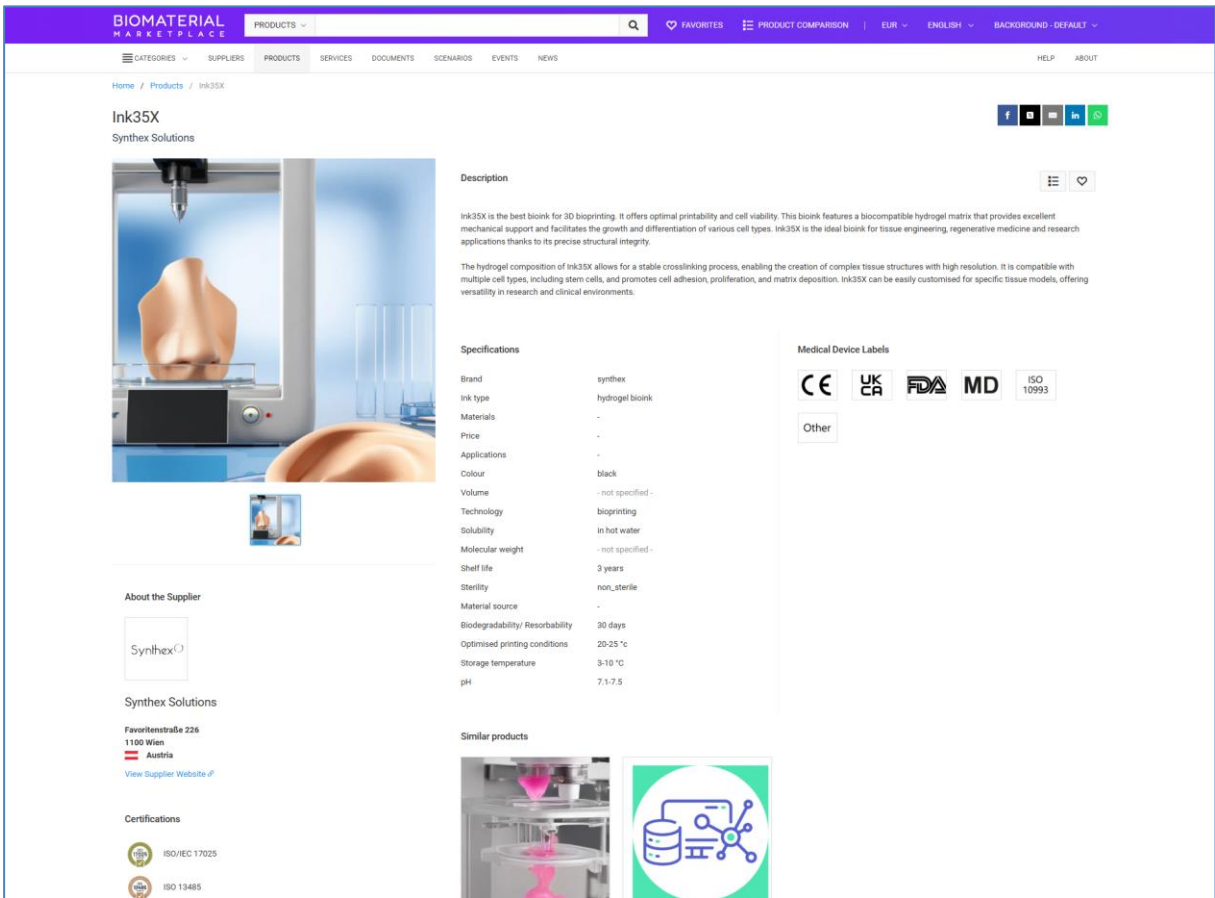


Figure 50. Product Detail Page (Marketplace)

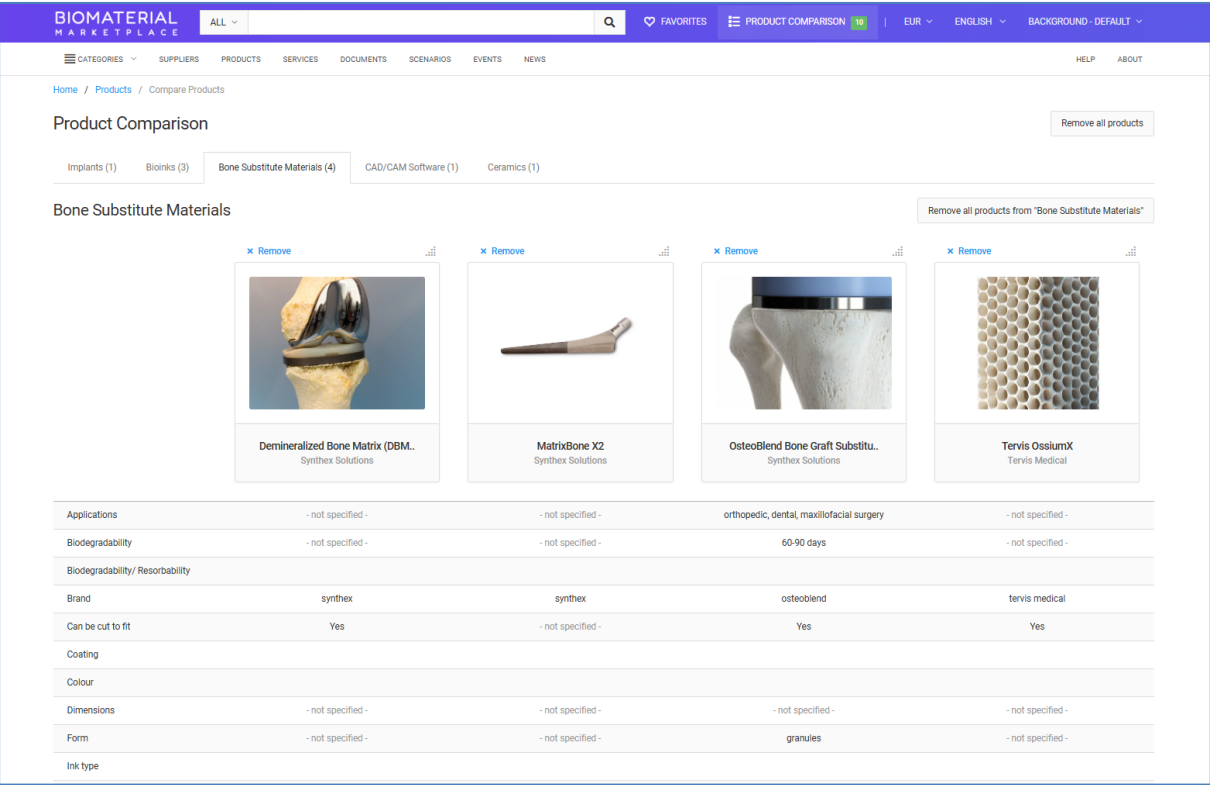


Figure 51. Product Comparison (Marketplace)

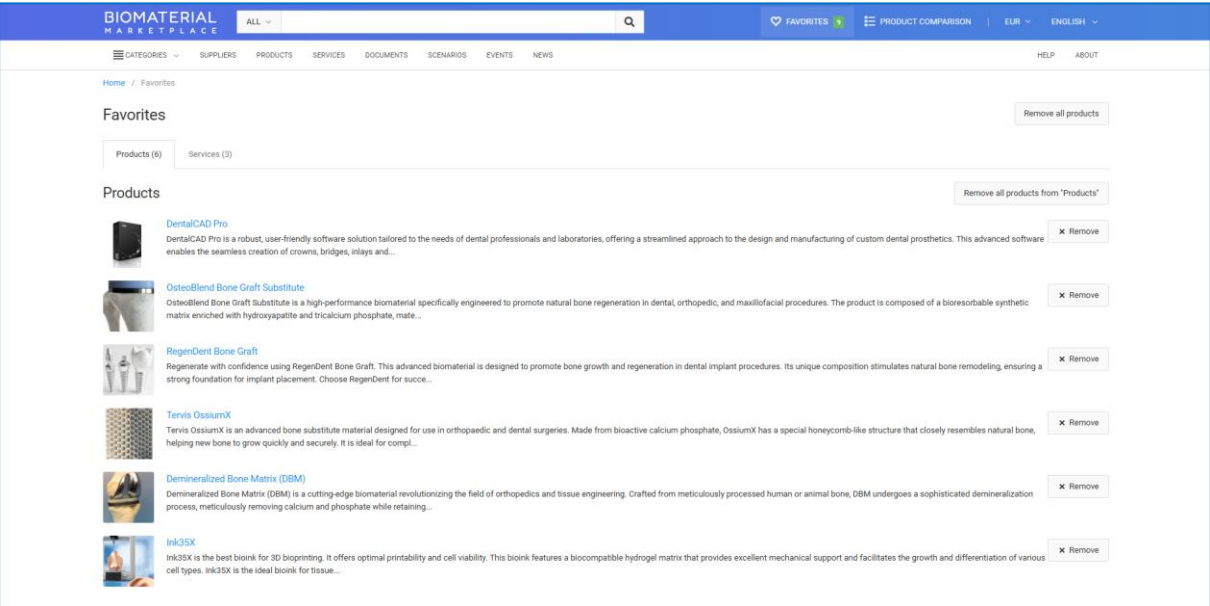


Figure 52. Favourite List (Marketplace)

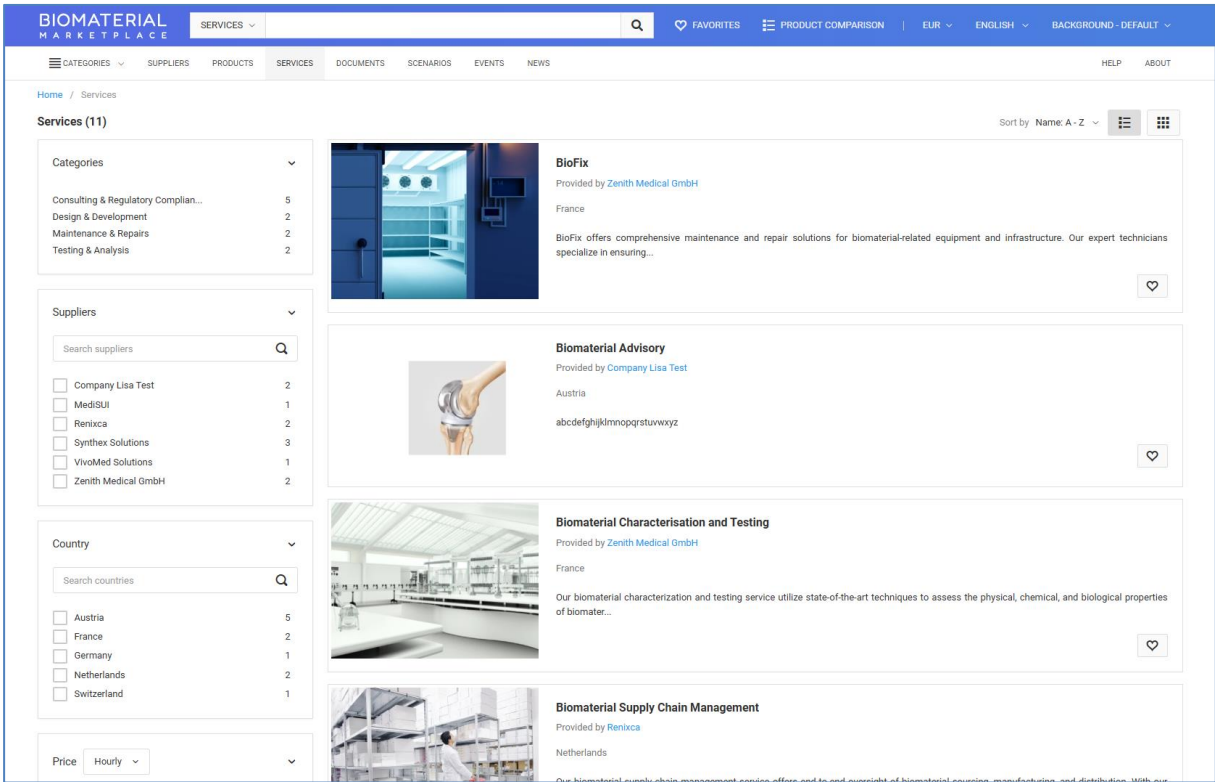


Figure 53. Service List (Marketplace)

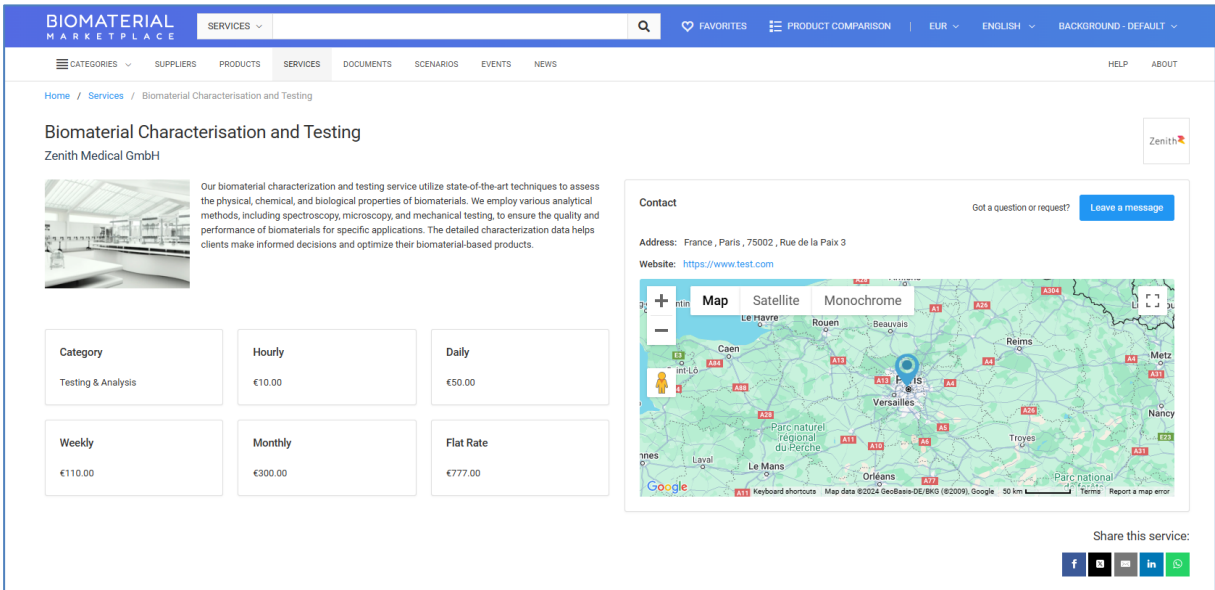


Figure 54. Service Detail Page (Marketplace)

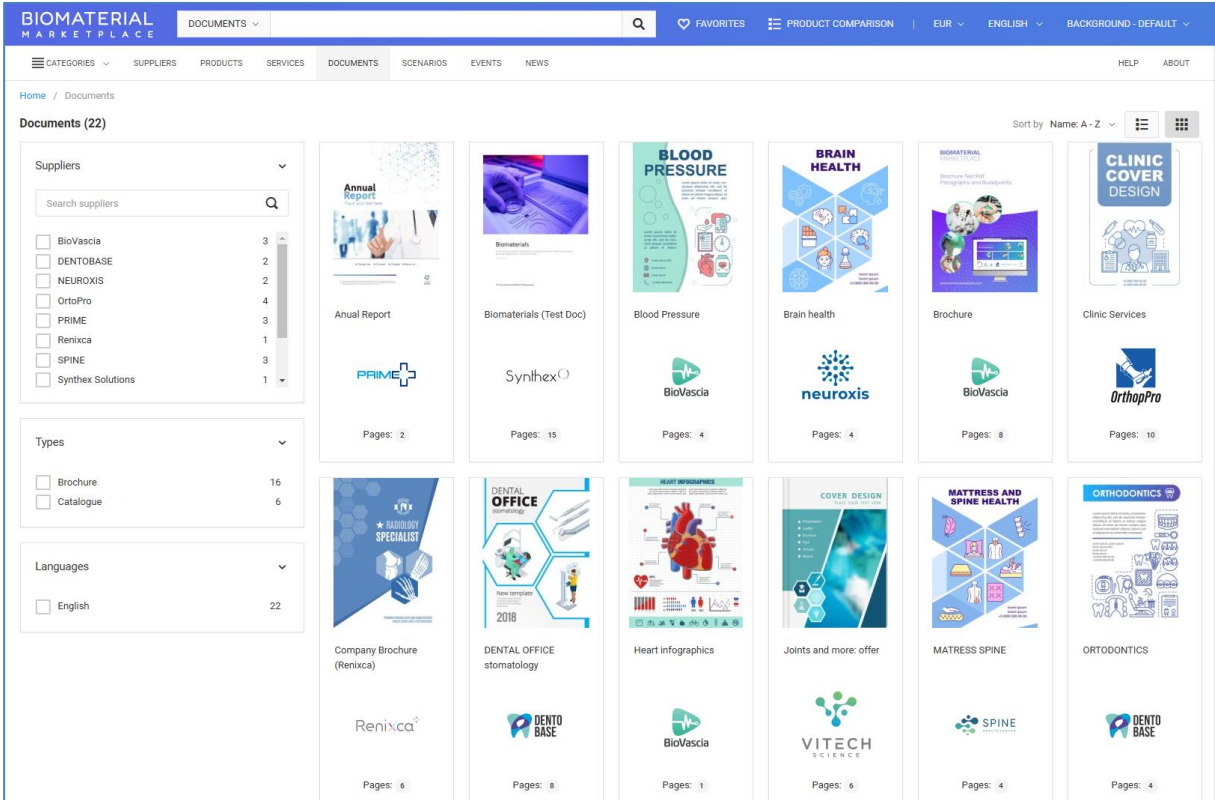


Figure 55. Document Grid (Marketplace)

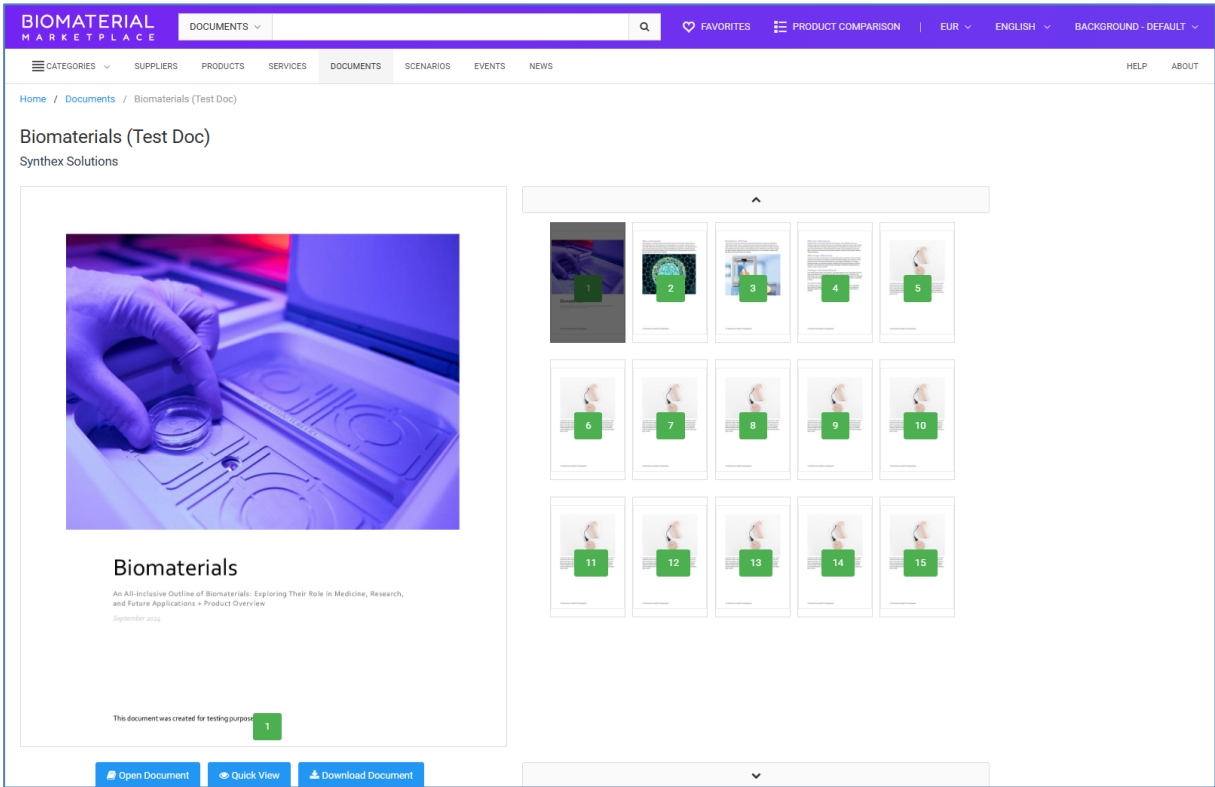


Figure 56. Document Detail View (Marketplace)

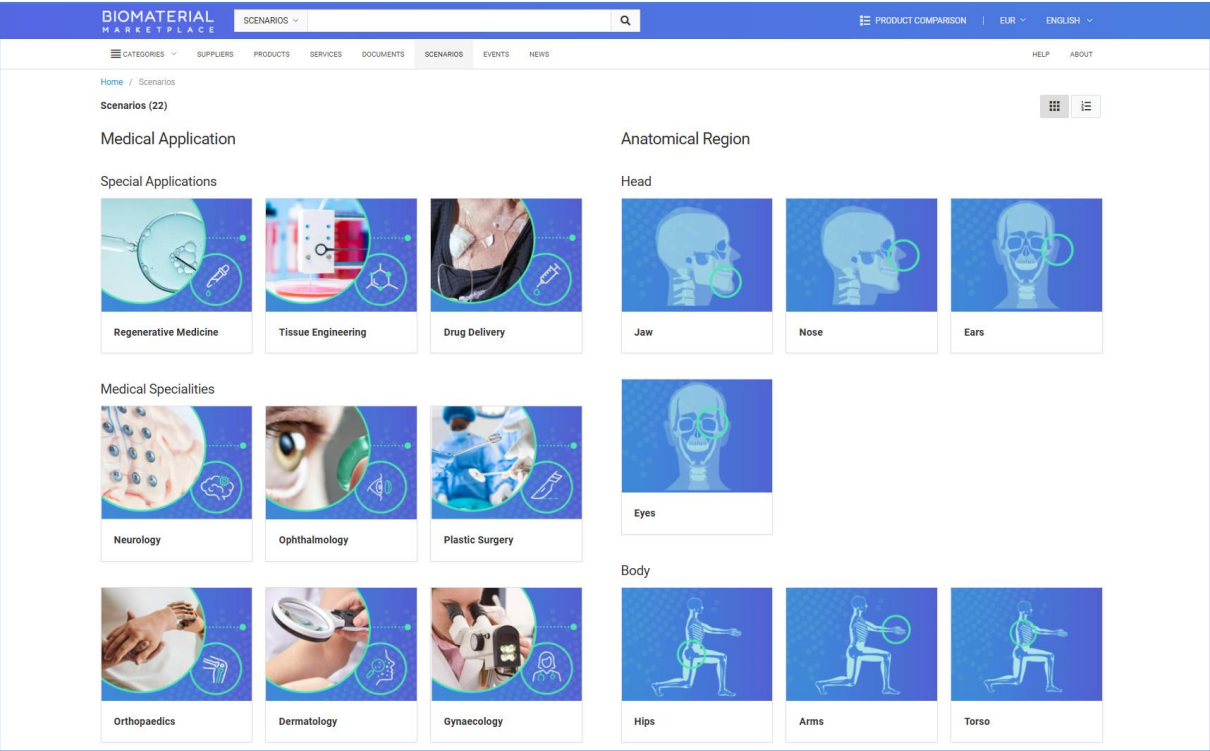


Figure 57. Scenario Overview (Marketplace)

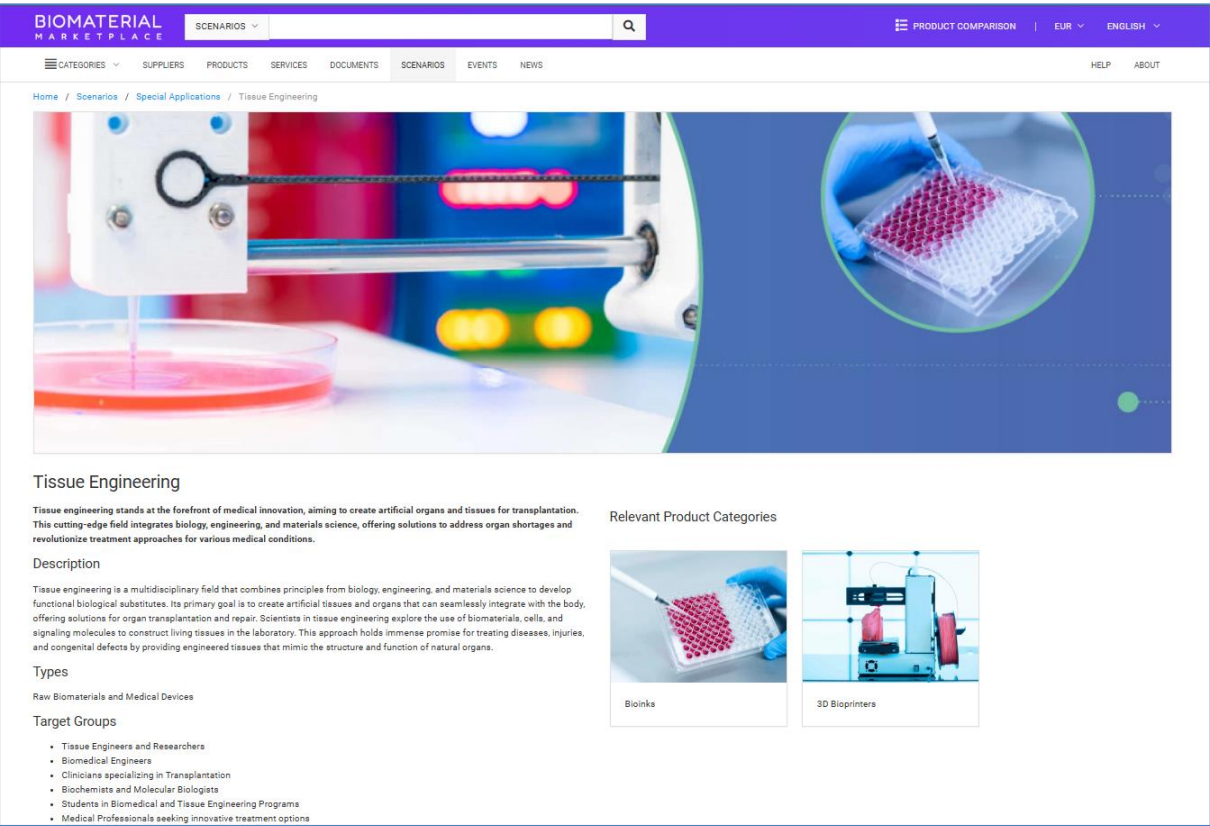


Figure 58. Scenario Detail Page (Marketplace)

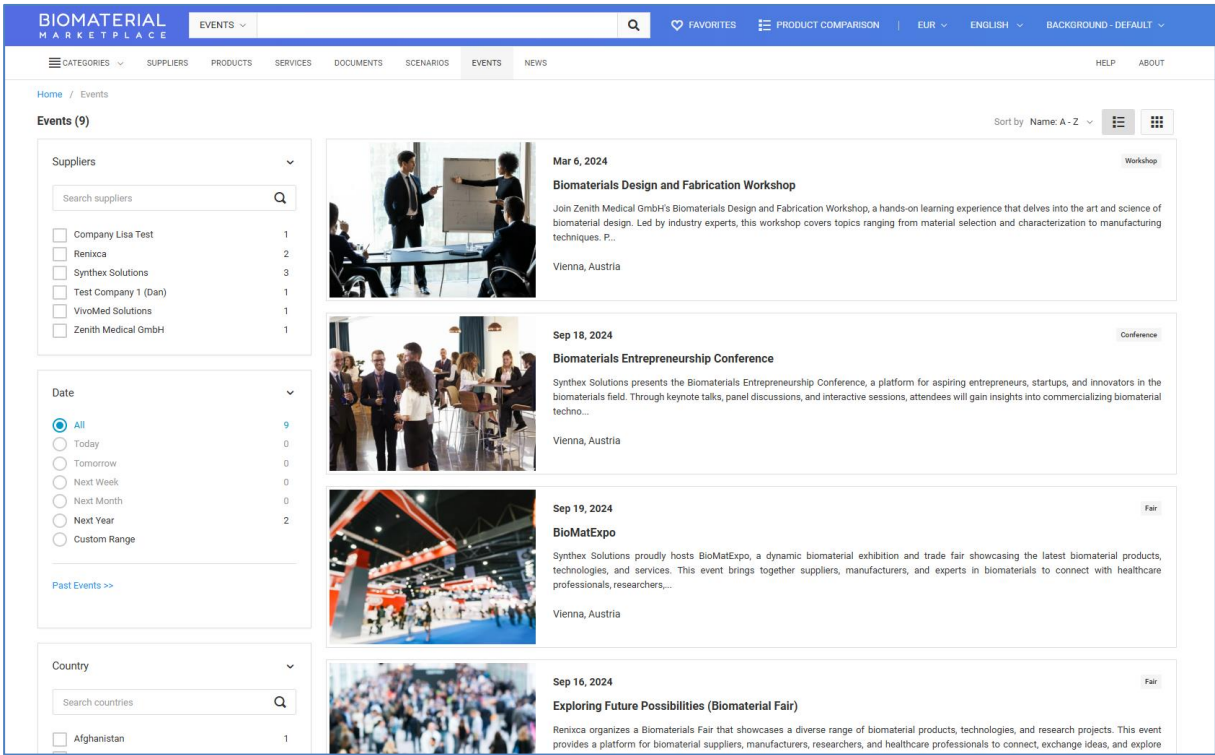


Figure 59. Event List (Marketplace)

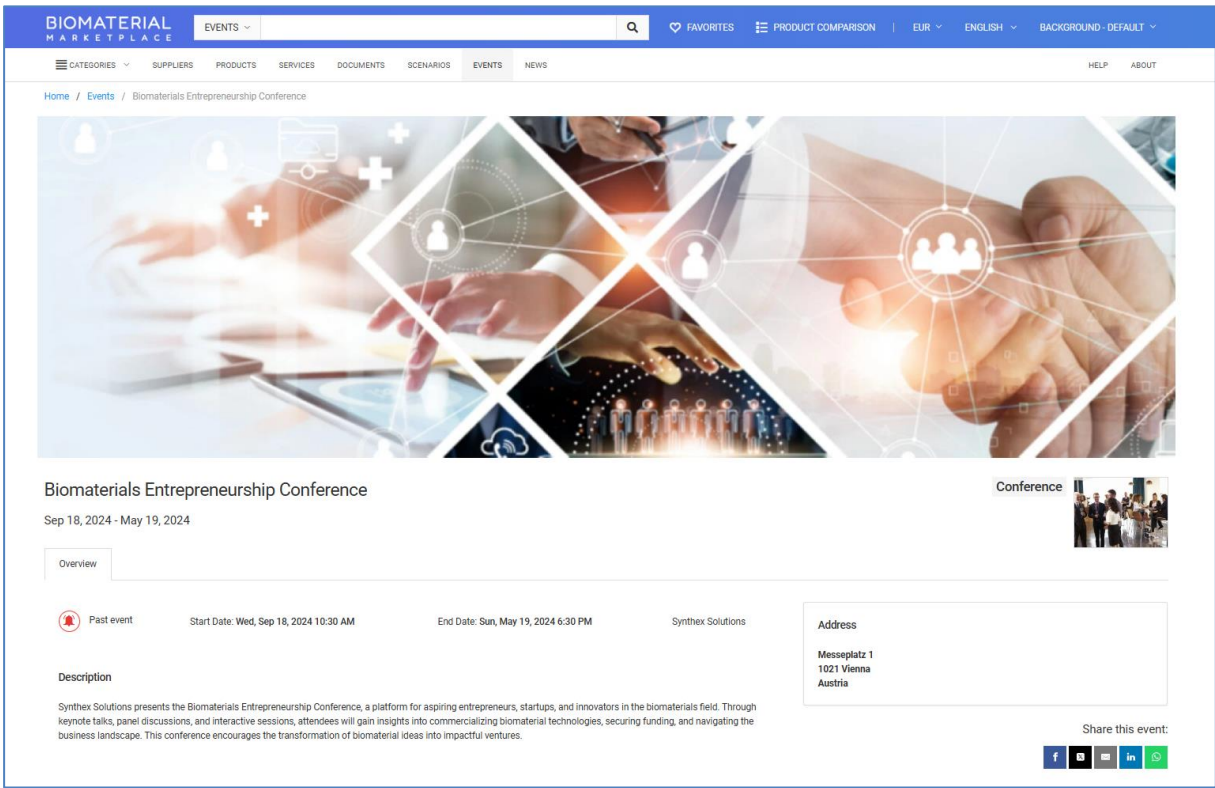


Figure 60. Event Detail Page (Marketplace)

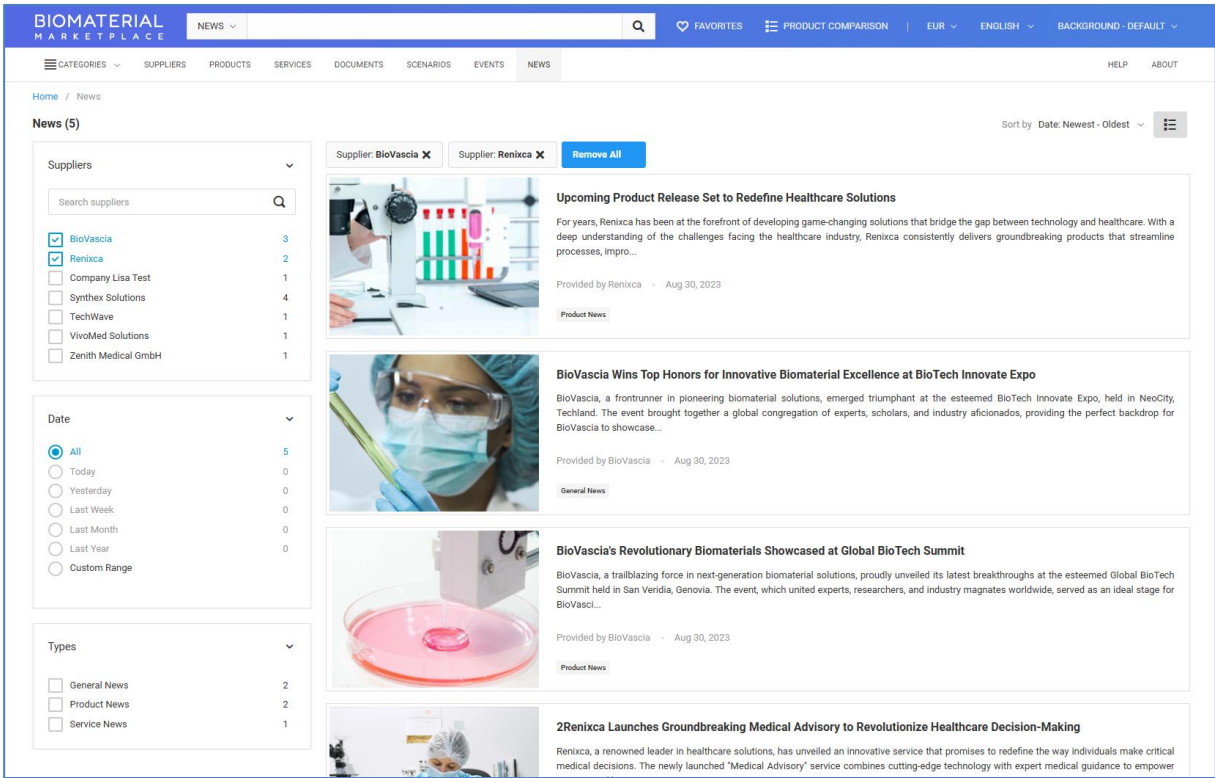


Figure 61. News List (Marketplace)

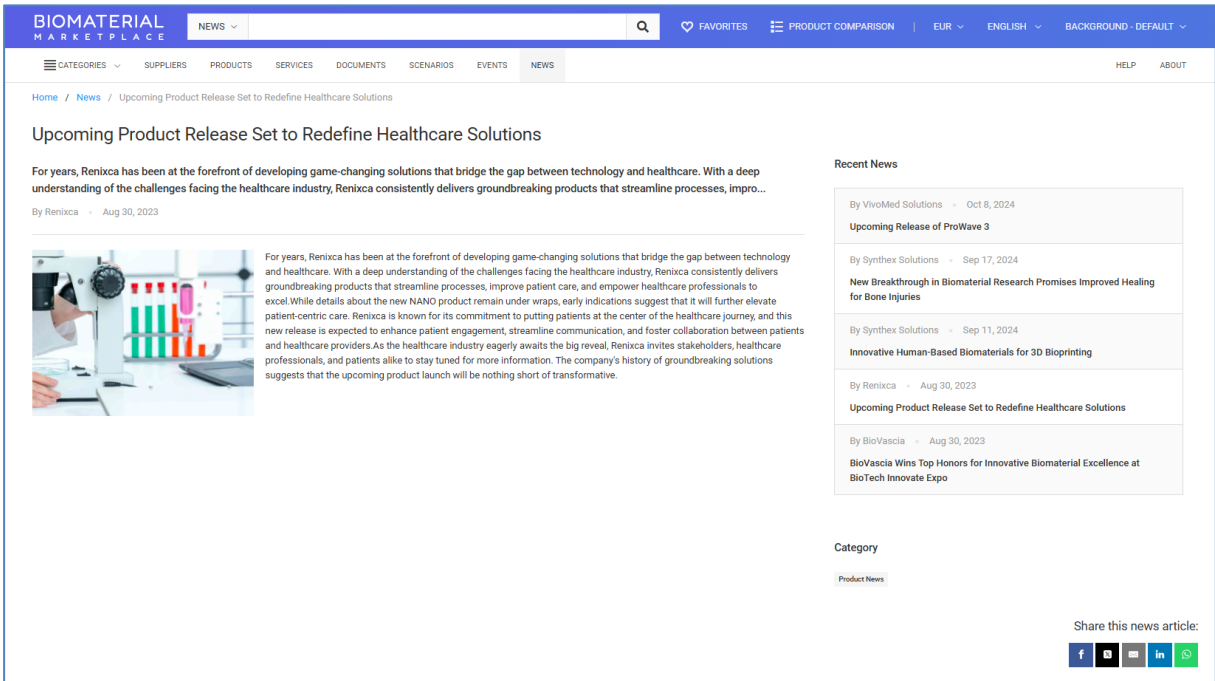


Figure 62. News Detail Page (Marketplace)

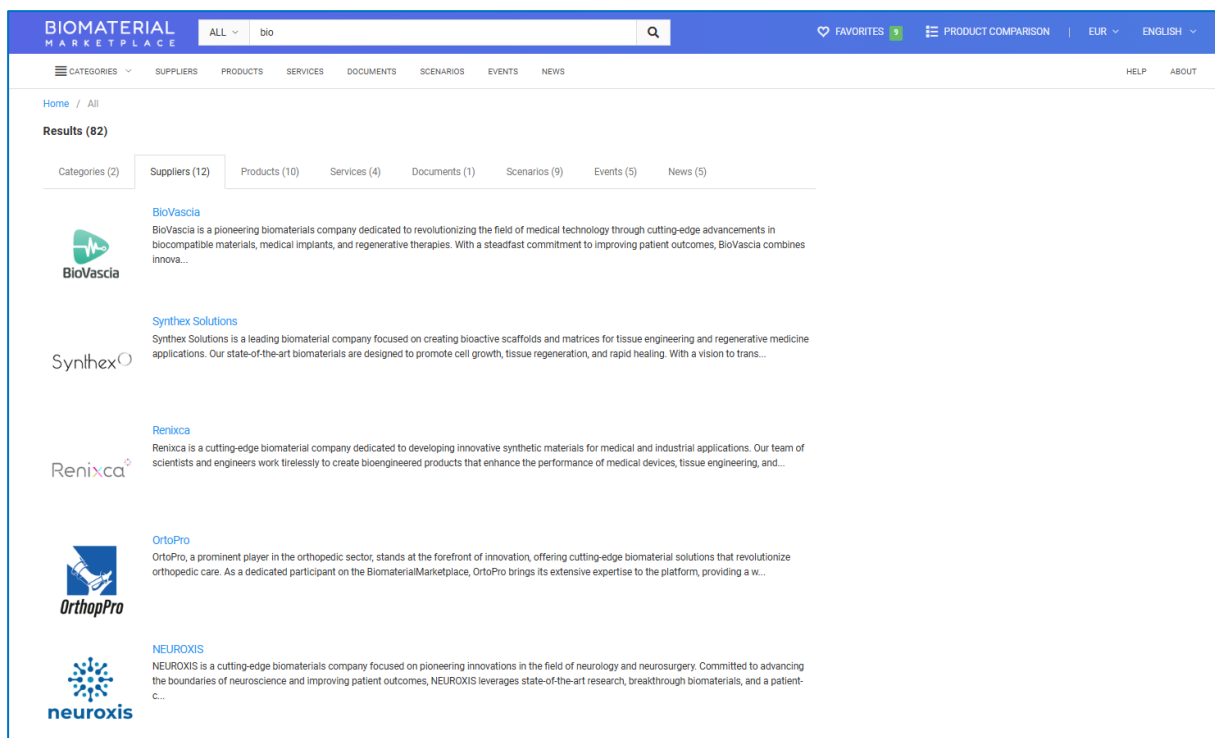


Figure 63. Search Results (Marketplace)

3.3 Advisors

Advisors are an additional interface that aims to provide suggestions to users in terms of EU project collaborations and fundings. The provided modules are projects, funding, organisations and tenders. The advisors are live at this stage but might undergo further improvement in this last phase of the project, including automated suggestions for users on the front page as well as an enhanced banner presentation.

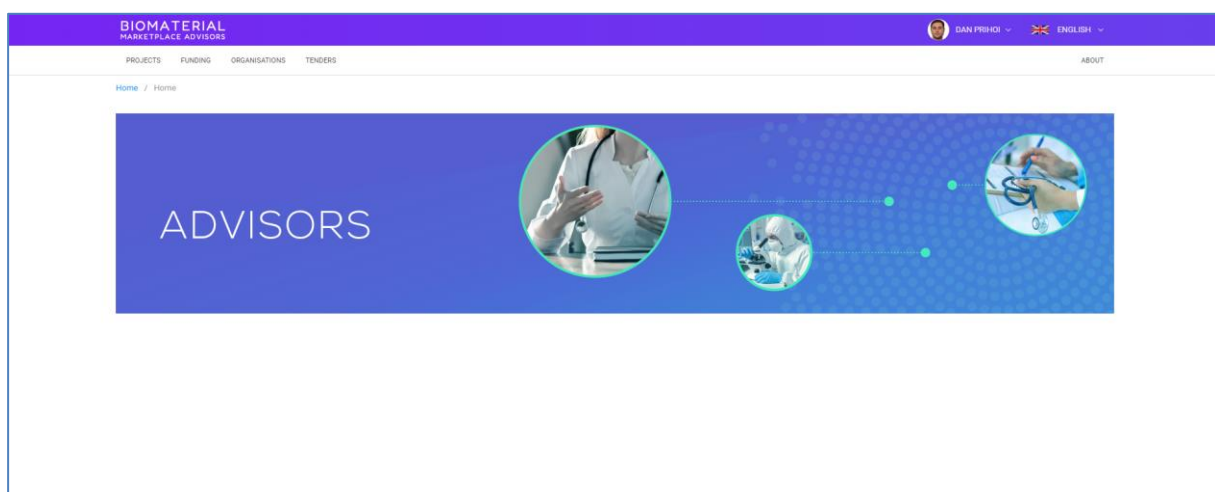


Figure 64. Front Page (Advisors)

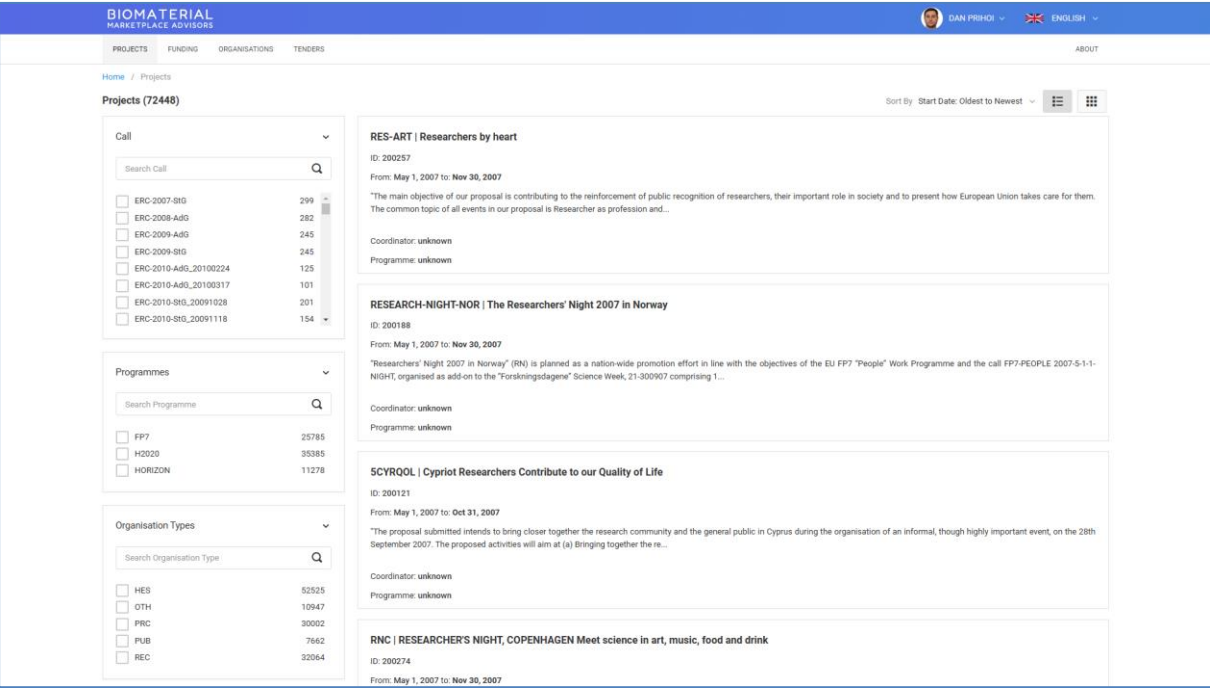


Figure 65. Project List (Advisors)

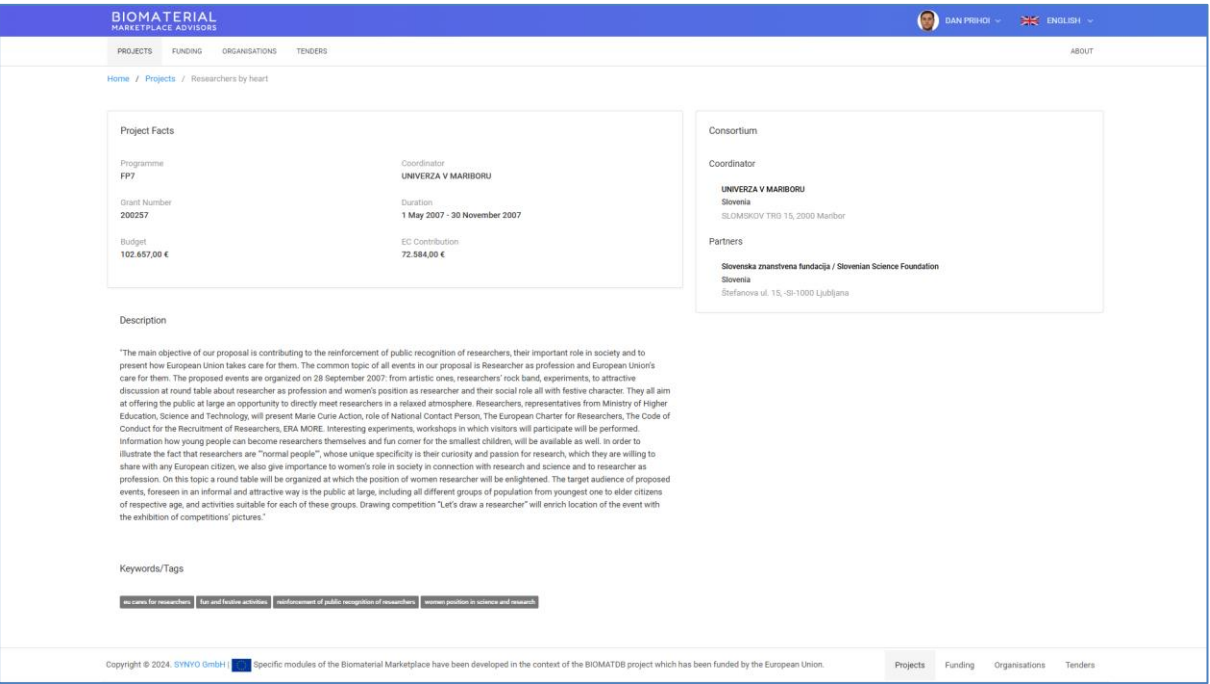


Figure 66. Project Detail Page (Advisors)

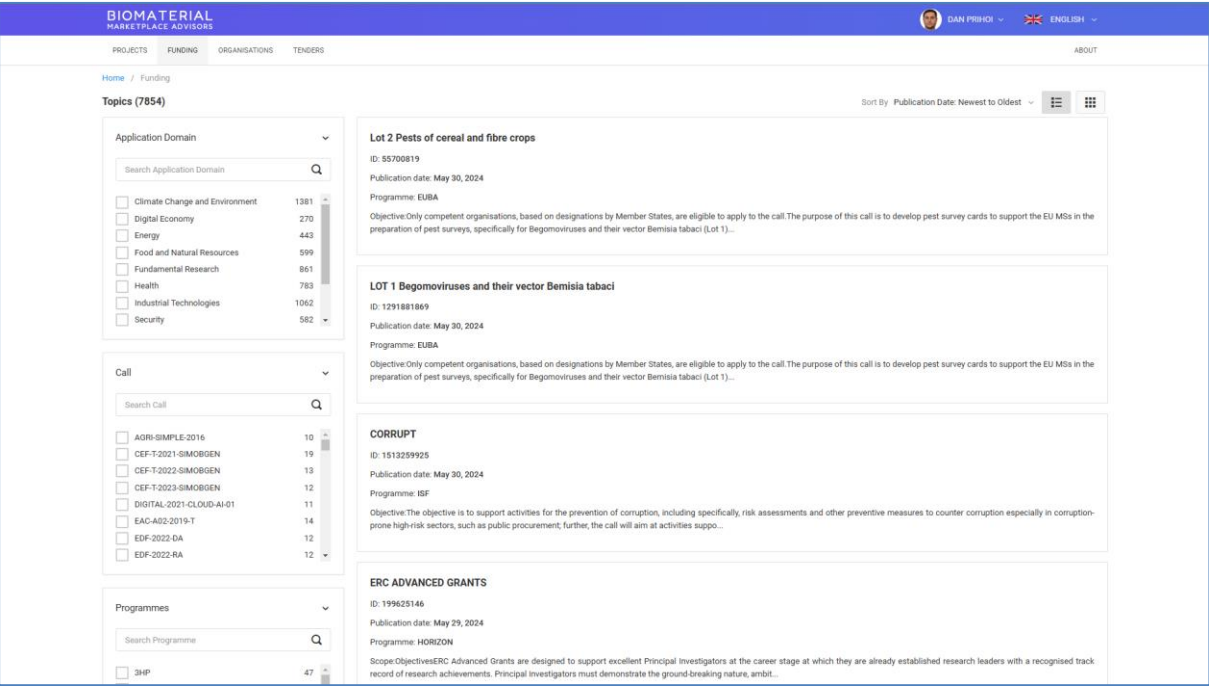


Figure 67. Funding List (Advisors)

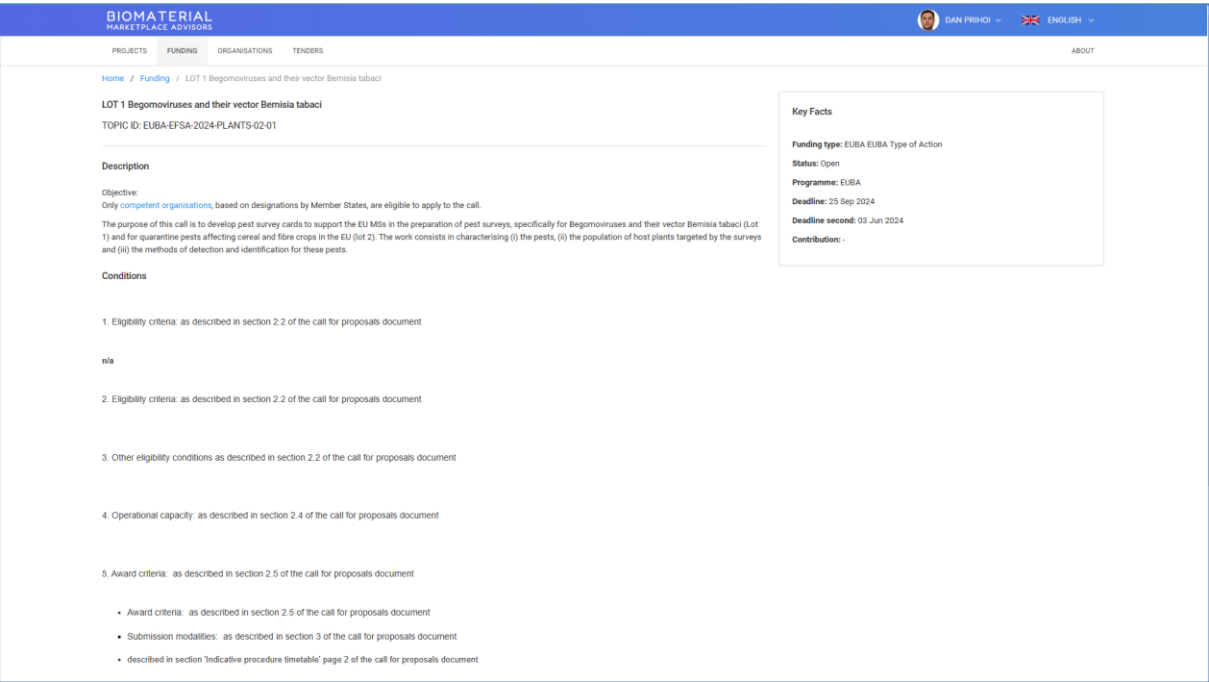


Figure 68. Funding Detail Page (Advisors)

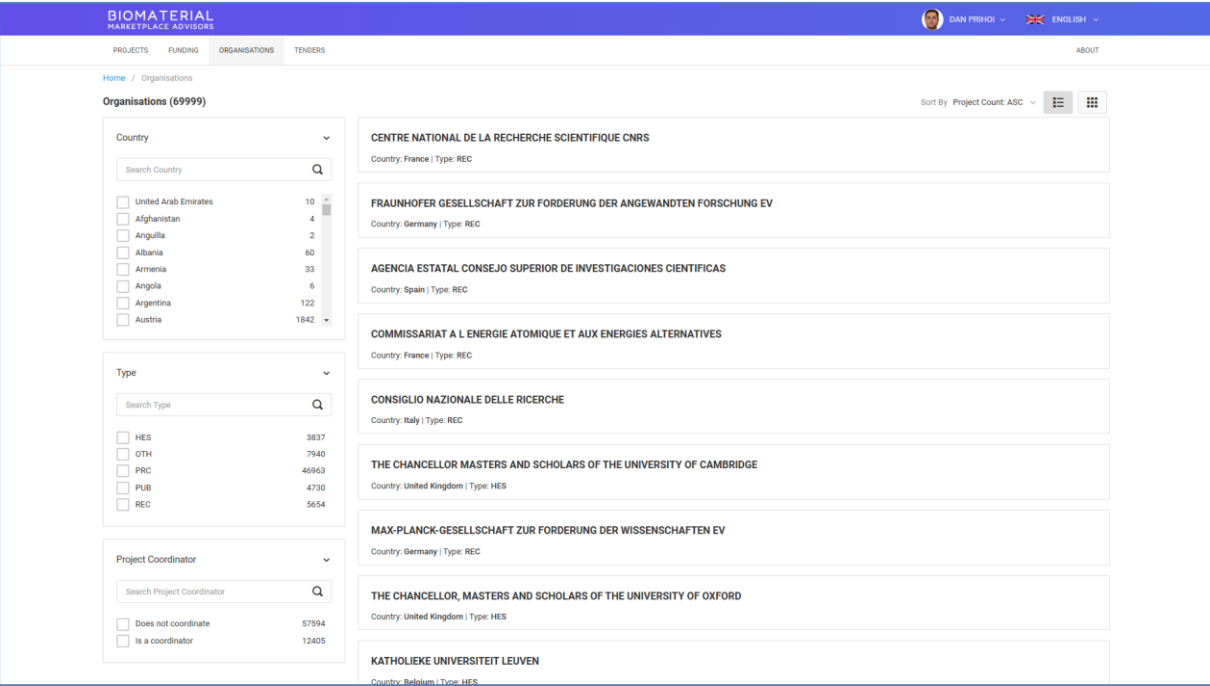


Figure 69. Organisation List (Advisors)

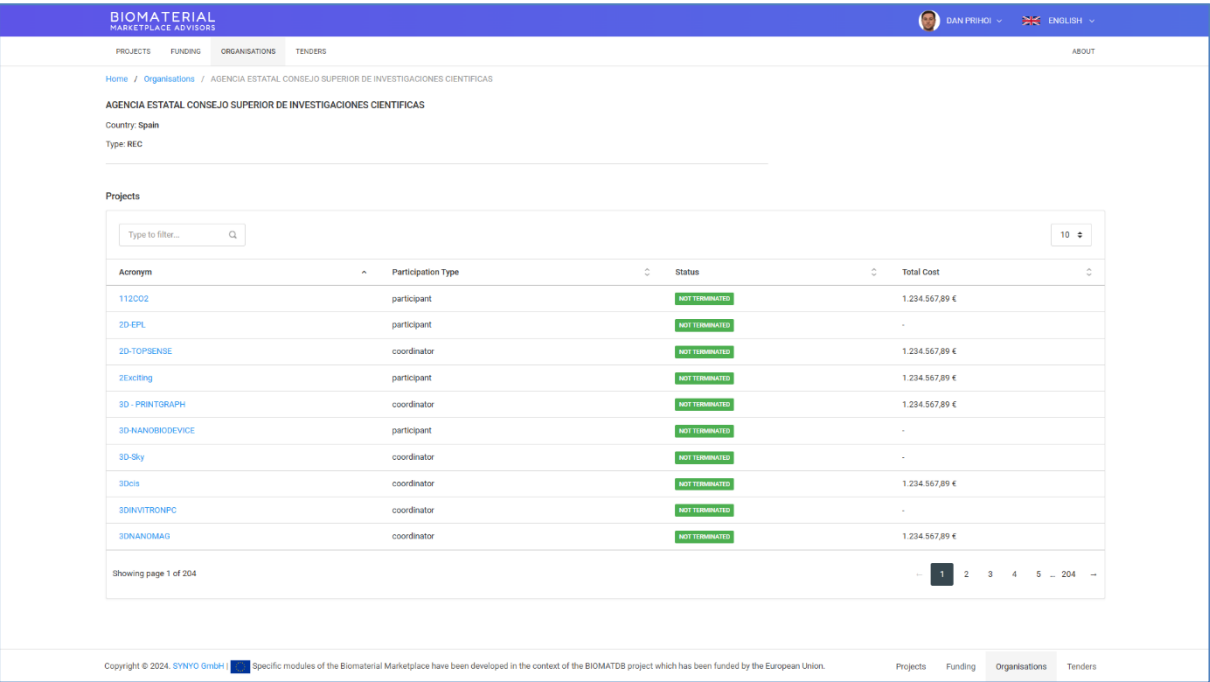


Figure 70. Organisation Detail Page (Advisors)

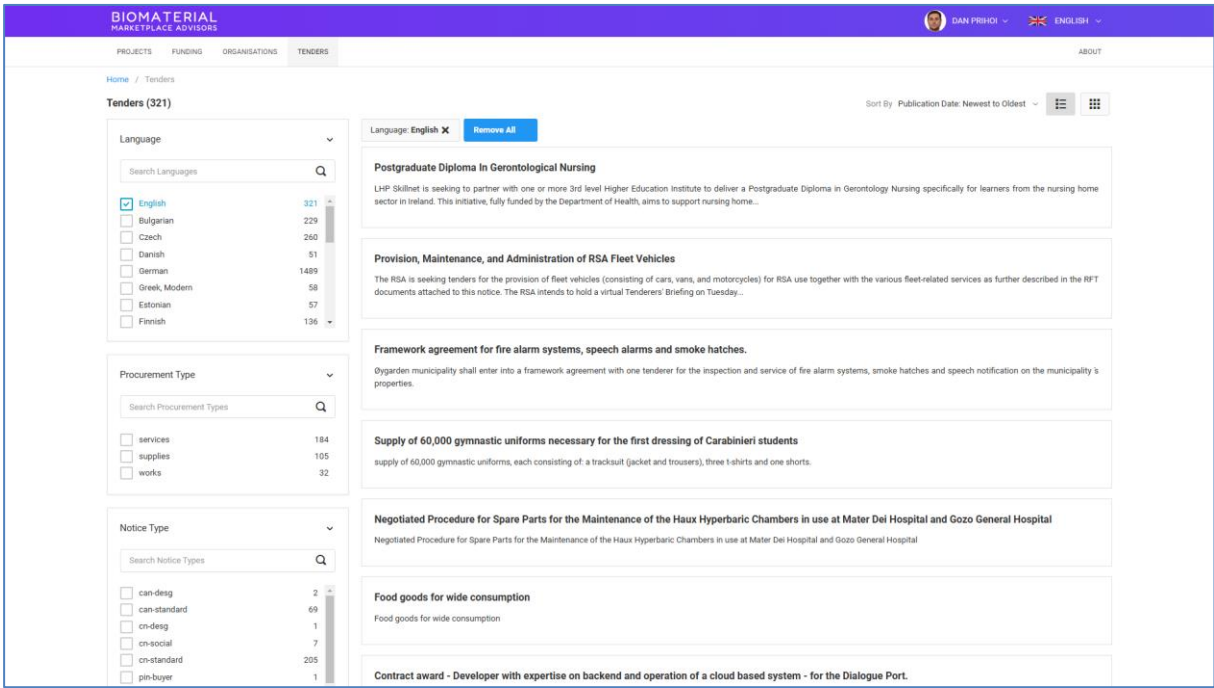


Figure 71. Tender List (Advisors)

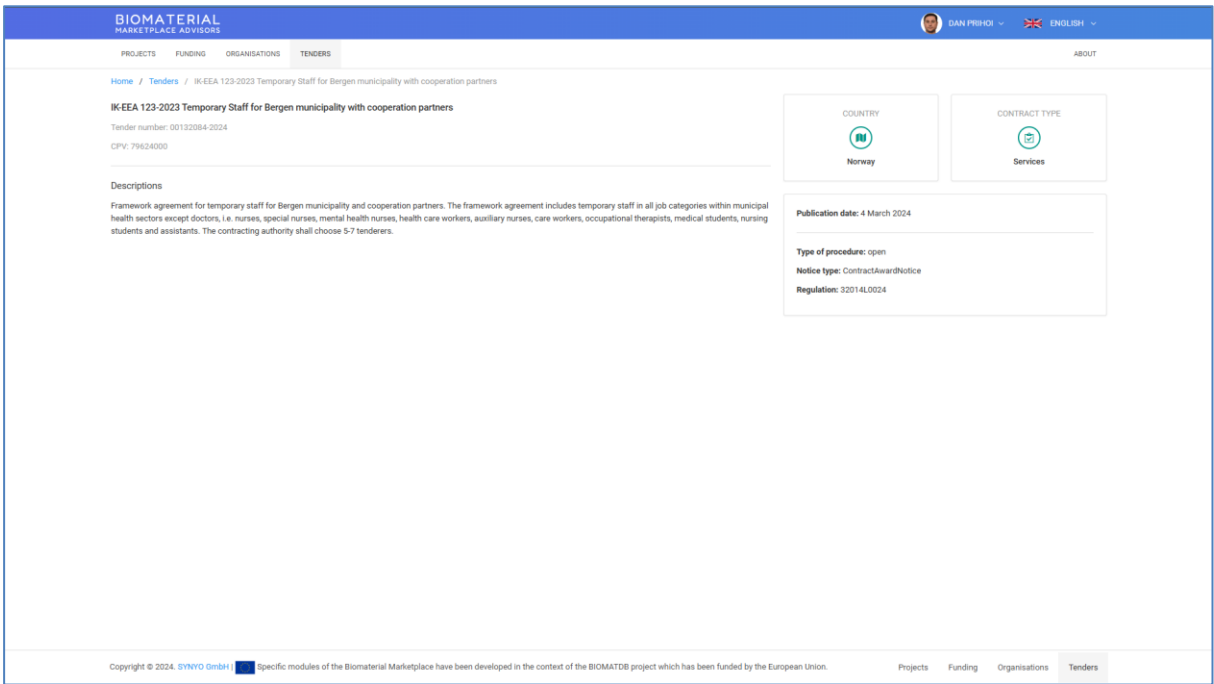


Figure 72. Tender Detail Page (Advisors)

4 Conclusion

This document demonstrates the developed applications, including their interfaces, features, and components. The development of all solutions, the Biomaterial Database, the Biomaterial Database Help System, the Biomaterial Marketplace, the Biomaterial Marketplace Admin Panel, and the Biomaterial Marketplace Help System, is essentially complete.

Continuous improvements and minor additions will be implemented and deployed until the end of the project. The latest version is always accessible via the URLs of the live versions, which have been shared multiple times, including in this deliverable.