DarChemDN

Darwinian Chemistry Doctoral Network

Project No. 101119956

Deliverable D5.1

DarChemDN website and social media channels

WP 5 – Communication, Dissemination and Exploitation

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Alexandra Furio (accelCH)	First version	19/12/2023
Jörn-Frederik Wotzlaw (accelCH)	Internal review	08/01/2024
Sijbren Otto (RUG)	Final version	16/01/2024

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Partners

Short name	Full name
RUG	University of Groningen
ESPCI	École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris
BGU	Ben Gurion University of the Negev
PARM	Parmenides Foundation
ELV	Elvesys
USAAR	Universität des Saarlandes
accelCH	Accelopment Schweiz AG
MSV	Spectrometry Vision BV
DEW	Dewpoint Therapeutics GmbH
PARA	Paradigmatic Innovations GmbH
LMU	Ludwig-Maximilians-Universität München

Abbreviations

Abbreviations	Description
DC	Doctoral Candidates
DN	Doctoral Networks
D	Deliverable
EC	European Commission
EU	European Union
HEU	Horizon Europe

Executive summary

Background

DarChemDN, or Darwinian Chemistry Doctoral Network, is a Marie Sklodowska-Curie Actions Doctoral Network (MSCA-DN). This deliverable is part of the DarChemDN Work Package (WP) 5 " Dissemination and Exploitation including Communication" and outlines the DarChemDN project website and social media channels, including their setup and development process, structure, as well as content. The project website and social media channels will be maintained and updated regularly throughout the duration of the project and after its completion.

Objectives

The DarChemDN website and social media channels serve as the main platforms for communication, dissemination, and exploitation efforts throughout the project. It provides consortium partners and target audiences alike with up-to-date, consistent and easily accessible information on the project, its results, and partners. With the help of this deliverable, the project website and social media channels, the DarChemDN project aims to:

- Maximise awareness for the DarChemDN
- Share knowledge, project results and activities on an ongoing basis
- Inform about DarChemDN and its work
- Inform about relevant activities and upcoming events
- Increase awareness amongst diverse stakeholders, especially the general public

Methodology and implementation

The website was set up using WordPress. The website and social media channels were set up based on the DarChemDN brand identity, which served as basis for the theme. The brand identity of DarChemDN was used consistently and in a uniform manner throughout all of the website and social media content.

Outcomes

The outcome of deliverable D5.1 is the DarChemDN project website, darchem-dn.eu, live since July 2023 and LinkedIn page, which was also set up in July 2023, and @DarChemDN channels on X (formerly Twitter) and YouTube set up in December 2023.

Impact

The DarChemDN website has provided key information on the project, training programme and news to the public since July 2023, before the project start. It has also introduced the supervisors and advertised open positions for DCs, for which applications are still incoming. The LinkedIn posts promoted the website launch in July 2023, the project kick-off in November 2023, and the open DC positions. The focus of the website and social media channels has been the provision of information on the training programme and DC recruitment, in line with the project timeline, which is currently in the DC recruitment phase.

Next steps

More pages will be created on the DarChemDN website, continuously providing insights into the science progress of the project and each DC candidate will be introduced upon completion of the recruitment process. The social media channels will be handed over to the DCs to communicate their work from within the project consortium and foster their science communication skills.

1 Introduction

The aim of the DarChemDN research programme is to develop, for the first time, synthetic chemical systems that can undergo Darwinian evolution. The proposed research will be conducted by 10 Doctoral Candidates (DCs) hosted and supervised by the project's beneficiaries. The project started on 1 November 2023, and will run over a duration of 48 months. As part of WP5 (Dissemination and Exploitation including Communication), this deliverable provides an overview of the WP's key objectives and of how the DarChemDN website and social media channels contribute to these goals.

2 Objectives and general overview

This section outlines the project objectives in terms of communication, the target audiences, brand identity, and processes which are relevant for the DarChemDN website and social media channels.

2.1 Objectives of WP5, the DarChemDN website, and social media channels

The website and social media channels are categorised under WP 5: Dissemination and Exploitation including Communication. Their objectives are specified in Annex 1 of the EC Grant Agreement (GA; Tab. 1).

Table 1. Summary of 'WP5 – Dissemination and Exploitation including Communication' goals

Objective #	Description
Objective 1	Raise and facilitate awareness for the DarChemDN project through engagement with the public and other relevant stakeholders
Objective 2	Maximise the project's impact through efficient dissemination and communication activities
Objective 3	Develop strategies for future exploitation of project outcomes

In the initial phase of the project (less than 3 months), the primary focus of the website and social media channels is on objectives 1 and 2. Section 3 (Website) and Sections 4 (Social Media) will provide detailed insights into how each platform addresses objective 1 and establishes the groundwork for objective 2. In the later stages of the project, all platforms will also contribute to achieving objective 3.

The overarching goal of the website and social media channels is to establish user-friendly and accessible channels serving as informative hubs for all target audiences and interested parties. These platforms are designed to be consistently updated throughout the project, with a focus on delivering content that engages specific target audiences. Individual strategies for each medium are outlined in Sections 3 and 4 below.

2.2 Target audiences

To successfully achieve the goals outlined in WP5, the target audience for DarChemDN communication has been delineated in Annex 1 of the EC GA. Communication initiatives, encompassing website content and social media publications, are intended to engage the following

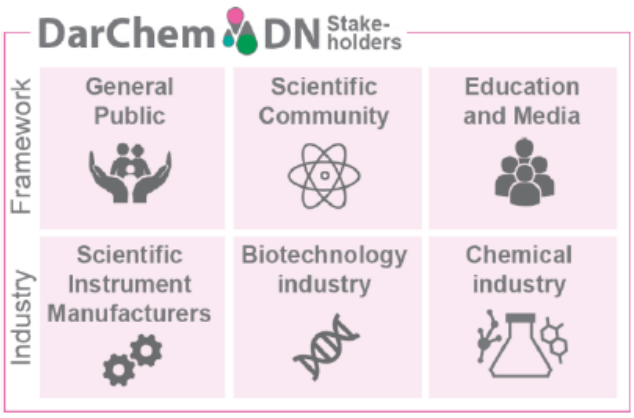


Figure 1. DarChemDN stakeholders.

stakeholder groups: the general public, the scientific community, and the education and media sectors. At an industrial level, the platforms are designed to cater to scientific instrument manufacturers, the biotechnology industry, and the chemical industry.

2.3 Theme

The DarChemDN visual identity and document font (Arial) were chosen to enhance readability on various online platforms and for diverse outreach materials. The theme has been customised and refined by accelCH, aligning it with the DarChemDN visual identity, all with the overarching objective of enhancing readability. This theme, as illustrated in Figure 2, is consistently applied across the project website and social media posts.

CMYK	100, 0, 8, 33	CMYK	0, 65, 40, -7
RGB	0, 172, 159	RGB	273, 95, 163
HEX	#00AC9F	HEX	#FF5FA3
CMYK	100, 0, 47, 39	CMYK	4,2,0,51
RGB	0, 156, 83	RGB	119, 121, 124
HEX	#009C53	HEX	#77797C

Figure 2. DarChemDN colour guide.

2.4 Images and Graphics

Aligned with the DarChemDN theme, images and graphics are selected to augment post visibility and enhance user experience during website visits. These visuals consistently adhere to our brand identity, elevating the content across both the website and posts.

Moreover, the logos of beneficiaries and associated partners are incorporated whenever suitable, such as on the 'Project' page within subpages 'Beneficiaries' and 'Associated Partners'. The website also showcases detailed profiles of the supervisors, with future plans to include profiles of all recruited Doctoral Candidates (DCs). In both cases, the utilised pictures and graphics are provided by the project partners and respective parties to maintain a cohesive and professional visual representation.

3 Website

This section provides an overview of the status of the DarChemDN website, detailing its setup process and underlying logic. Specifically, it looks into the website structure, scrutinising individual pages and subpages. The final segment addresses the pages currently under construction or

planned for the near future. Overall, the website adheres to an intuitive and cohesive structure. At the forefront is the landing page, with four additional pages – Project, Team, Training, and News.

The logic of the website is grounded in the project timeline. Given the start of recruitment in September 2023, the website's primary objective was to facilitate this process, ensuring the project commenced on schedule. Consequently, the initial information uploaded onto the subpages offers an overview of the project to interested parties and relevant stakeholders. Simultaneously, it provides detailed insights to potential candidates regarding the setup of this doctoral network, including the identities of supervisors and partners.

3.1 Header and footer

Consistently across all website pages, both the header (encompassing the logo and pages) and the footer (housing the EU disclaimer, contact information, privacy policy, etc.) remain visible. The header also incorporates links to the info email and LinkedIn.

3.2 Landing page

The landing page, the initial interface visible to visitors at https://darchem-dn.eu/, is designed to fulfil key objectives and the primary functions encompass:

a) Attracting a diverse audience, notably potential stakeholders and Doctoral Candidates (DCs).

b) Providing concise information about the project.

c) Offering seamless navigation to various subpages.

Visitor Attraction

To captivate visitors, encompassing stakeholders and potential doctoral candidates, the landing page employs DarChemDN's specified colour palette, engaging graphics, and succinct, accessible information. Strategically placed buttons guide visitors to pertinent subpages such as Research, Training, and Open Positions.

Information Provision

The landing page initiates with a succinct project description, outlining its objectives and approach. A 'Glossary' button, located beneath the text block, facilitates an instant pop-up for users to familiarise themselves with crucial terms integral to comprehending the intricate research. Adjacent to buttons leading to Research, Training, and Open Positions pages, brief introductory text segments accompany each, offering visitors an immediate overview. This approach allows users to obtain relevant information swiftly, with the option to delve into more extensive details by clicking on their respective buttons. Further down, key milestones are highlighted in news boxes, accompanied by logos representing all partners affiliated with the DarChem DN network. Without navigating further, users gain a comprehensive understanding of the project's subject matter, current milestones, and involved stakeholders, achieved simply by scrolling through the landing page.

Facilitation of Subpage Access

Adjacent to the visually prominent text blocks, each featuring a concise introductory phrase and a corresponding button leading to Research, Training, and Open Positions pages, a sliding banner enhances accessibility. This banner features extracts from published news articles, allowing visitors to swiftly navigate to pages or articles of interest. This strategic design ensures a seamless and engaging user experience.

3.3 Project

The initial accessible page from the website's primary navigation menu is the project page. Its objective is to furnish a more detailed introductory insight into the project, encompassing the scientific aspects as well as other pertinent project details, including the involved parties. To enhance clarity, this page is segmented into three subpages: research, beneficiaries, and associated partners.

3.3.1 Research

Expanding upon the concise project overview presented on the landing page, this section is designed to offer insights into the research framework of the Doctoral Network. Currently in the recruitment phase, this section provides a brief introduction to DarChemDN's interdisciplinary approach, and the diverse scientific fields encompassed by the project.

Tailored for DCs to enhance readability and understanding, a graph is included to provide an overview of WPs 1-3, illustrating the distribution of DC positions across these WPs. This page is also linked through an "open position" button, directing candidates to the application page, acknowledging the current focus of the project's stage.

3.3.2 Beneficiaries and Associated Partners

The beneficiaries and the associated partner subpages are both designed to provide a comprehensive understanding of the diverse research fields encompassed by this multidisciplinary project. Additionally, they aim to offer a brief introduction to the criteria considered when assembling the consortium, particularly with regard to beneficiaries and associated partners. This includes highlighting the expertise that these entities contribute to the overall project.

3.4 Team

The team page is segmented into two subpages aligned with its dual functions:

1) introduction of supervisors, and

2) provision of information on open positions.

The supervisors' page is compartmentalised into subpages that become visible upon hovering over the page. Upon selecting a name from the dropdown, users are directed to a dedicated page containing comprehensive details on the academic background, experience, and publications of each supervisor. This page also incorporates a photograph of the supervisor, a quote, and links to their profiles on the internet and social networks. This structuring aims to furnish potential Doctoral Candidates (DCs) with extensive information about available positions and their prospective collaborators.

The recruitment page is configured to furnish all requisite information for individuals interested in joining the doctoral network. It delineates key information such as eligibility criteria, the offerings of the DarChemDN programme, and provides a step-by-step guide on the application process. A button titled "Apply for all positions via the recruitment web form" facilitates access to all recruitment forms.

The second section of this page, titled "Open Positions," presents DC1-10 in distinct boxes, furnishing key details: DC title, institutions, laboratory, location, and supervisor. Each box includes a button labelled "Download the Job Description." Clicking on this button grants interested individuals access to a PDF containing further details on the specific positions. These PDFs, crafted based on information provided by partners, have been placed into templates reflecting the project's theme colours and subsequently uploaded.

3.5 Training

In the "Training" section, a comprehensive overview of the types of training provided by DarChemDN is presented. Subsequently, a dynamic timeline detailing key training modules and events unfolds, commencing with the inaugural kick-off meeting held on 8 November 2023 and culminating with the DC Final Symposium in 2027.

3.6 News

The news page features a dynamic carousel where news boxes are set in motion, enabling users to obtain an overview of key news. Each box incorporates a "read more" button, facilitating access to the subpage containing the complete article.

3.7 Button: open positions

This button has been intentionally positioned at the top of the navigation menu pages. Distinguished by its button format, it redirects to the "Open Positions" subpage under "Team". This strategic placement aligns with the primary objective of concentrating on the ongoing recruitment process within the project at present.

3.8 Pages in planning

The next step will be to populate the website with more information on the project, the science and research behind it, and potential applications of such research. This will focus on further targeting the general public, the scientific community, on education and on industry stakeholders (see section 2.3). Once the recruitment of the DCs advances, a separate page will be created to introduce each candidate with a short text and image.

4 Social Media

The DarChemDN social media channels on X and LinkedIn were established in December 2023, before the completion of the DC recruitment process. These platforms, along with the project website, constitute the cornerstone of DarChemDN's communication and outreach initiatives, serving as the primary source for project-related news and information.

Social media plays a pivotal role in facilitating project communication and dissemination efforts. With an excess of 300 million active social media users in Europe, a robust social media presence is imperative to enhance the project's outreach and impact. Aligned with DarChemDN stakeholders and target audiences (refer to section 1.3), the chosen social media platforms are LinkedIn and X. While LinkedIn, as a networking site for professionals primarily engages industry stakeholders, X serves as a prominent channel for communicating project updates and disseminating results within the scientific and academic community. The principal aim of the social media channels is to consistently and promptly provide engaging and accessible updates about DarChemDN. The concise narrative style adopted by these channels complements the website's more comprehensive and detailed format.

The section below provides an overview of the project’s social media profiles and their current status.

4.1 LinkedIn

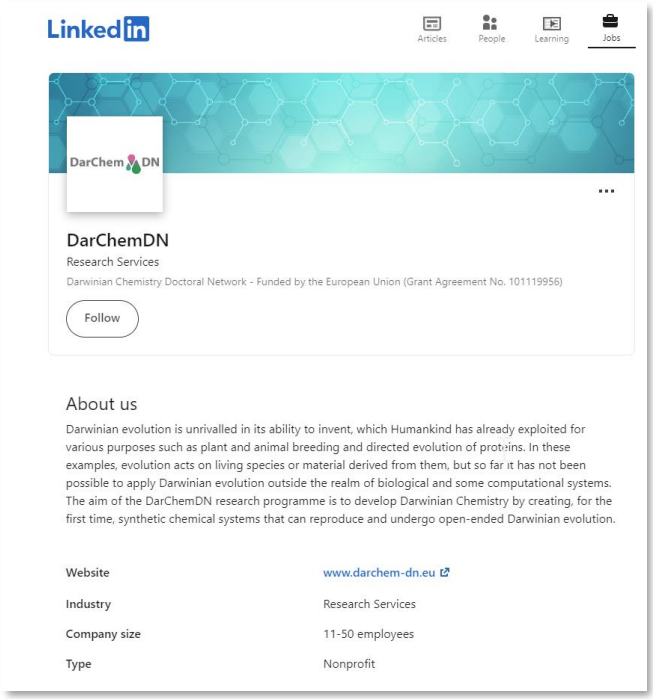


Figure 3. DarChemDN LinkedIn profile.

The DarChemDN LinkedIn profile was set up in July 2023. The DarChemDN visual identity extends to the project's LinkedIn channel, incorporating the same logo profile and website header. The LinkedIn description utilises hashtags such as #MSCA and #DarwinianChemistry to enhance the project page's discoverability among pertinent communities in similar fields and other Doctoral Networks. The LinkedIn page's configuration enables visitors to seamlessly access the DarChemDN website through a prominently highlighted link. It has primarily been used to draw attention to the DarChemDN website and DC recruitment process (see example of post in Section 7.4).

4.2 X (Twitter) and YouTube

The DarChemDN X account (Fig. 4)), established in December 2023 under the handle @DarChemDN_EU, has been configured to maintain a cohesive visual identity aligned with the DarChemDN website. This is achieved by incorporating the DarChemDN header image and utilising the DarChemDN logo as the channel's profile image. The X "bio," serving as a concise profile description, encapsulates a brief overview of the project's core and acknowledges the funding source. As the project commences, the objective is to disseminate a minimum of two posts per month through this platform.

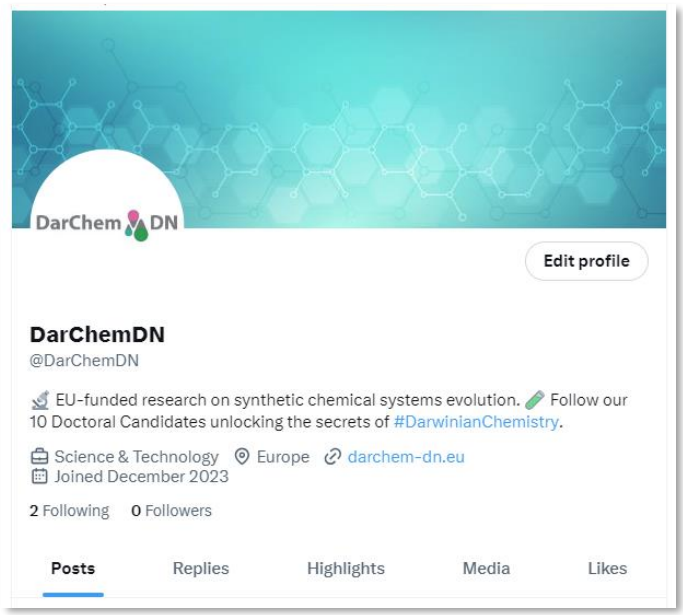


Figure 4. DarChemDN Twitter profile.

The DarChemDN YouTube (Fig. 5) was also set up in December 2023 and will be used to create video content throughout the project journey and the Doctoral programme. Analogously to X, the profile features the DarChemDN logo, the header image, a short project description, relevant links and the EU disclaimer.

Both these social media channels will be handed over to the DCs to communicate their work from within the project consortium and foster their science communication skills as part of the programme's multidisciplinary training.

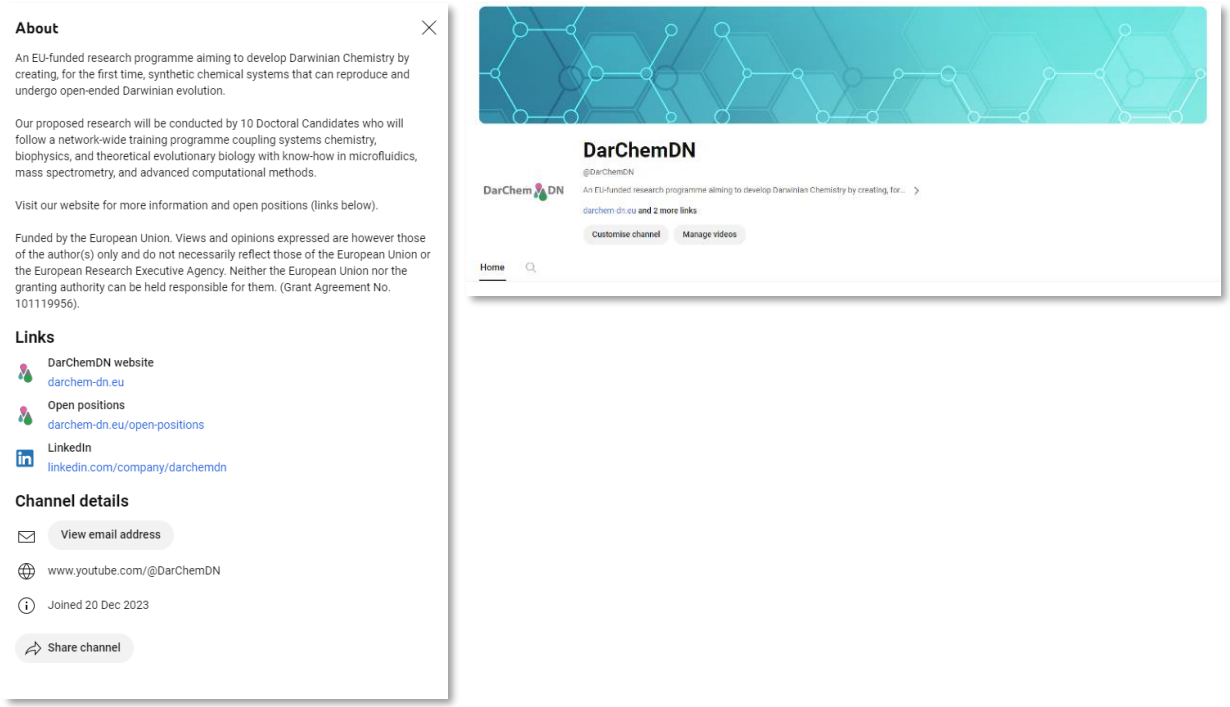


Figure 5. DarChemDN YouTube channel.

5 Evaluation

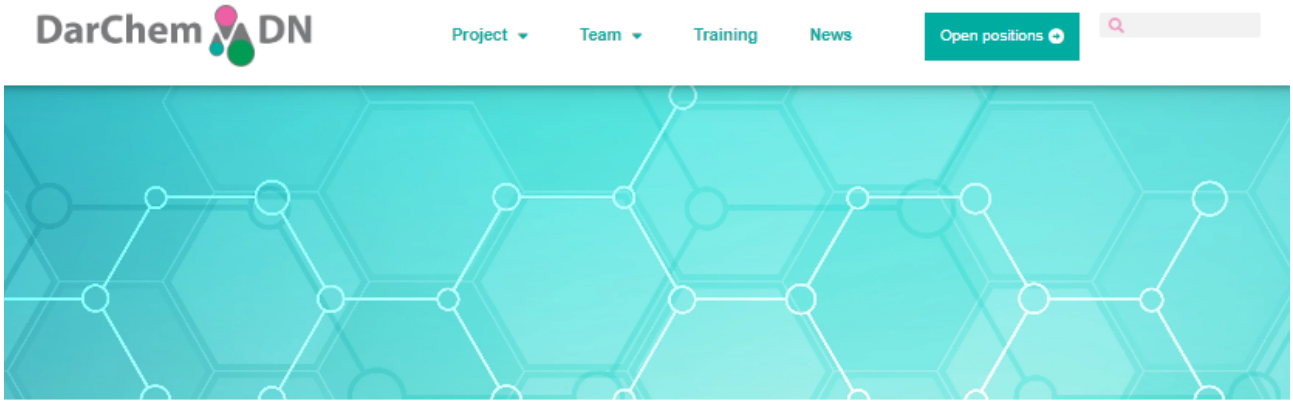
accelCH will assess the impact of the website by employing Google Analytics, enabling the monitoring of website traffic metrics such as page views and unique visitors. This approach facilitates the immediate identification of the impact of dissemination activities, such as presenting results at conferences, by observing a surge in new visitors. The performance of the DarChemDN social media channels, including LinkedIn and X, will be scrutinised through analytics tools. This comprehensive analysis will encompass follower counts, post impressions, and profile hits, guiding efforts to optimise content alignment with platform algorithms. Subsequently, the outreach will undergo evaluation to gauge the achievement of set targets, and if necessary, to identify new measures for further outreach.

6 Future work

As the project advances, the structure of the DarChemDN website will be adjusted to incorporate new information and introduce new pages as necessary. Continuous updates will be made to the social media channels. Following the completion of the recruitment process, a "Doctoral Candidates" page will be appended under "Team" on the website, featuring profiles of all DCs. Similarly, the introduction of DCs and supervisors will be disseminated through the DarChemDN social media channels. Once the DCs are integrated into their project teams and make progress in their work, the DarChemDN social media channels will transition to a regularly rotating team of DCs. Upon the availability of initial project results, such as publications or conference presentations, these will be shared through the DarChemDN social media channels. Additionally, a "Results & Outcomes" page will be implemented, linking all documented project results, including journal articles, posters, conference presentations, infographics, and similar materials, to their respective source websites.

7 Impressions of the website and social media profiles

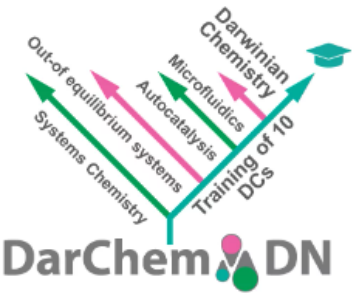
Website: Landing page



Darwinian Chemistry Doctoral Network

Darwinian evolution is unrivalled in its ability to invent, which Humankind has already exploited for various purposes such as plant and animal breeding and directed evolution of proteins. In these examples, evolution acts on living species or material derived from them, but so far it has not been possible to apply Darwinian evolution outside the realm of biological and some computational systems. The aim of the DarChemDN research programme is to develop, for the first time, synthetic chemical systems that can undergo Darwinian evolution.

Glossary



Research

Our research couples systems chemistry, biophysics, and theoretical evolutionary biology with know-how in microfluidics, mass spectrometry, and advanced computational methods.

Research

Training

Our network-wide training programme will complement the doctoral candidates' local training by offering access to various multi-disciplinary training events and dedicated workshops.

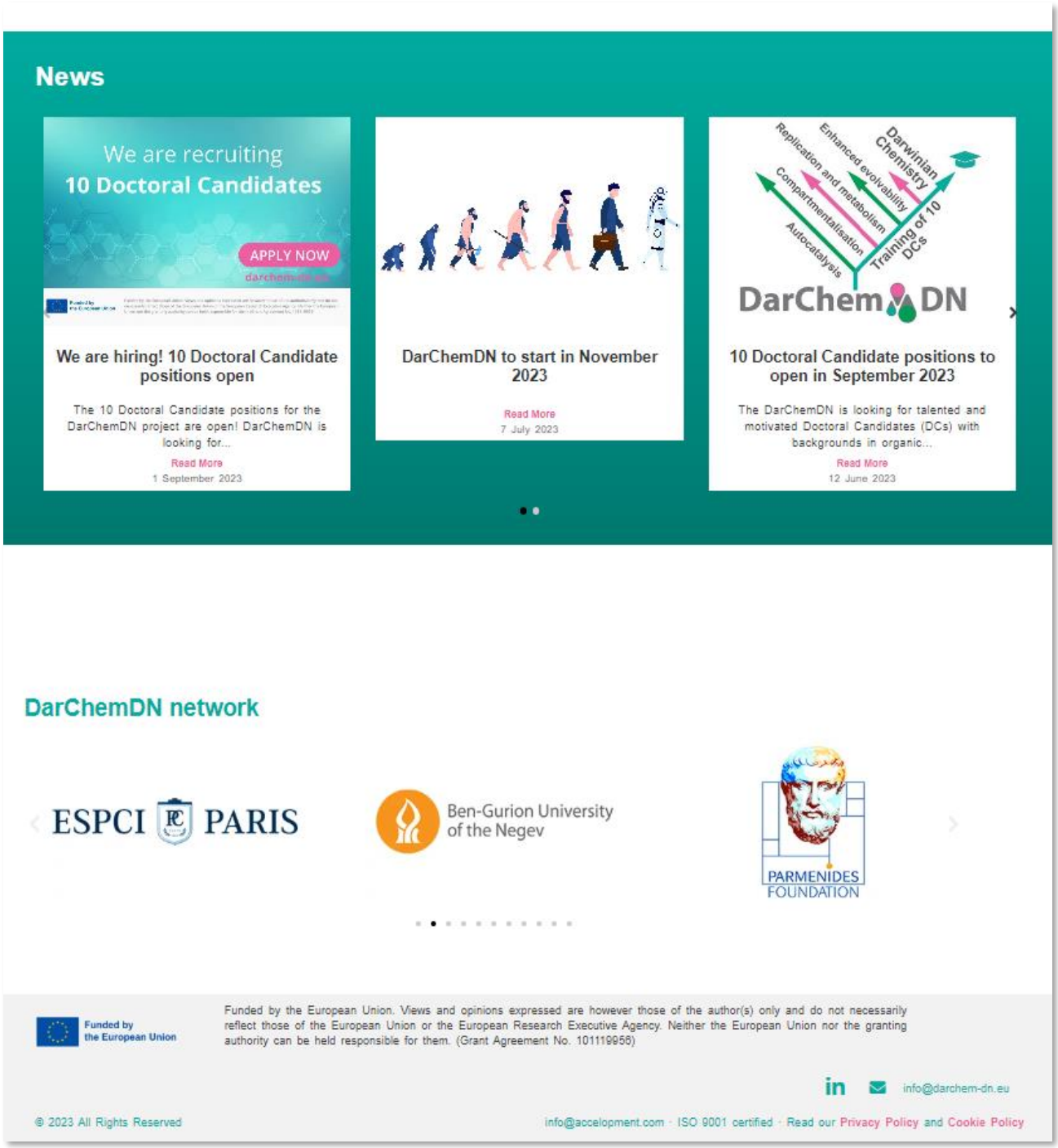
Training

Open Positions

The proposed research will be conducted by 10 Doctoral Candidates (DCs) hosted and supervised by our beneficiaries.

The positions open on 1 September 2023.

Open positions


News
We are recruiting
10 Doctoral Candidates
APPLY NOW
We are hiring! 10 Doctoral Candidate positions open
The 10 Doctoral Candidate positions for the DarChemDN project are open! DarChemDN is looking for...
Read More
1 September 2023
DarChemDN to start in November 2023
Read More
7 July 2023
Replication and metabolism
Enhanced evolvability
Darwinian Chemistry
Compartmentalisation
Autocatalysis
Training of 10 DCs
DarChemDN
10 Doctoral Candidate positions to open in September 2023
The DarChemDN is looking for talented and motivated Doctoral Candidates (DCs) with backgrounds in organic...
Read More
12 June 2023
DarChemDN network
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Ben-Gurion University of the Negev
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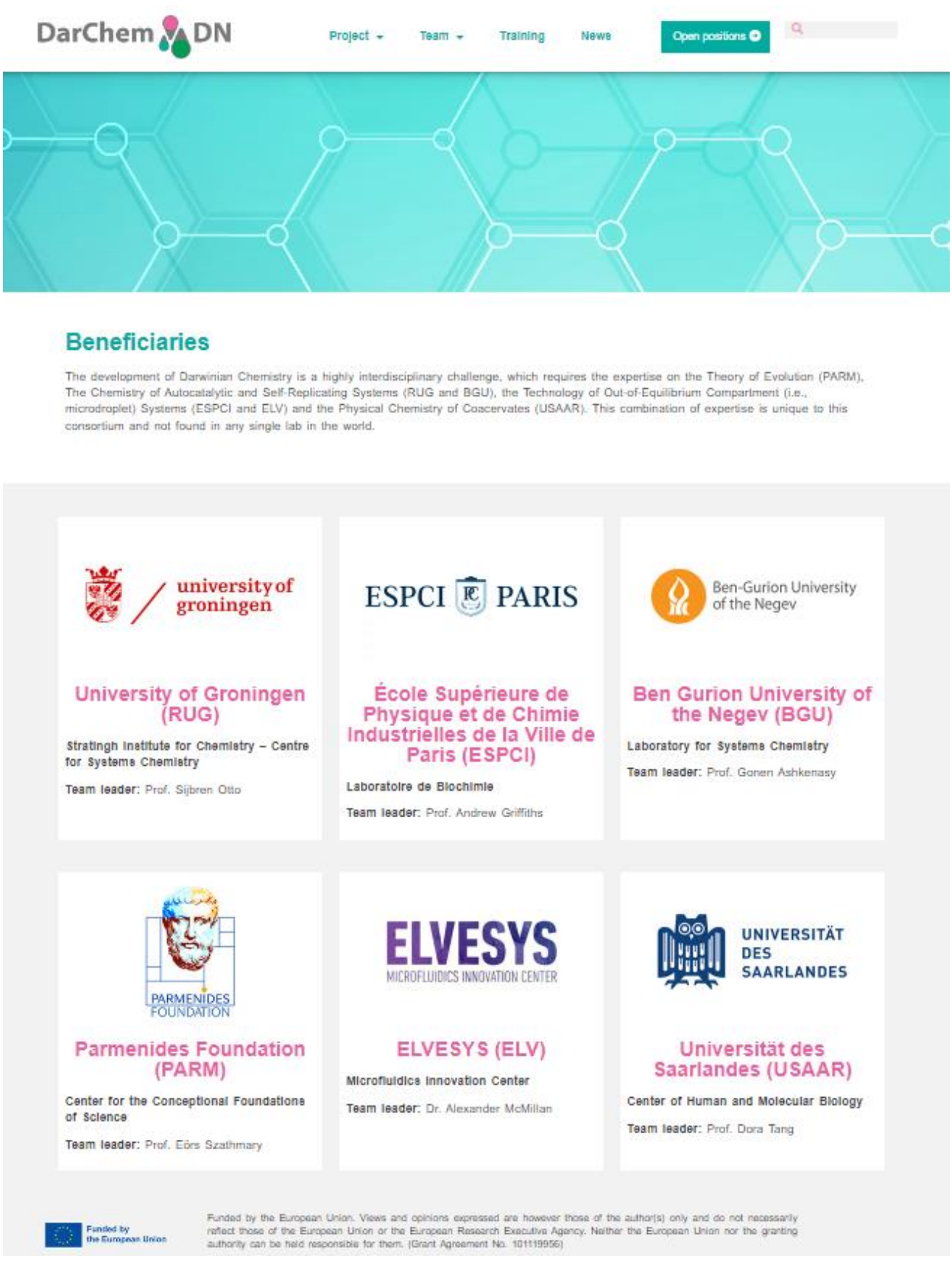
Website: Beneficiaries



Website: Supervisor profile

DarChem DN

Project | Team | Training | News | Open positions

Prof. Sijbren Otto

University of Groningen (RUG), NL

Stratingh Institute for Chemistry – Centre for Systems Chemistry

Professor of Systems Chemistry

DarChemDN coordinator, supervisor DC6 and DC10

university of groningen

The DarChemDN project aims to unleash the tremendous creative power of Darwinian evolution, for use in synthetic chemical systems. This is likely to revolutionize chemistry.

Prof. Sijbren Otto

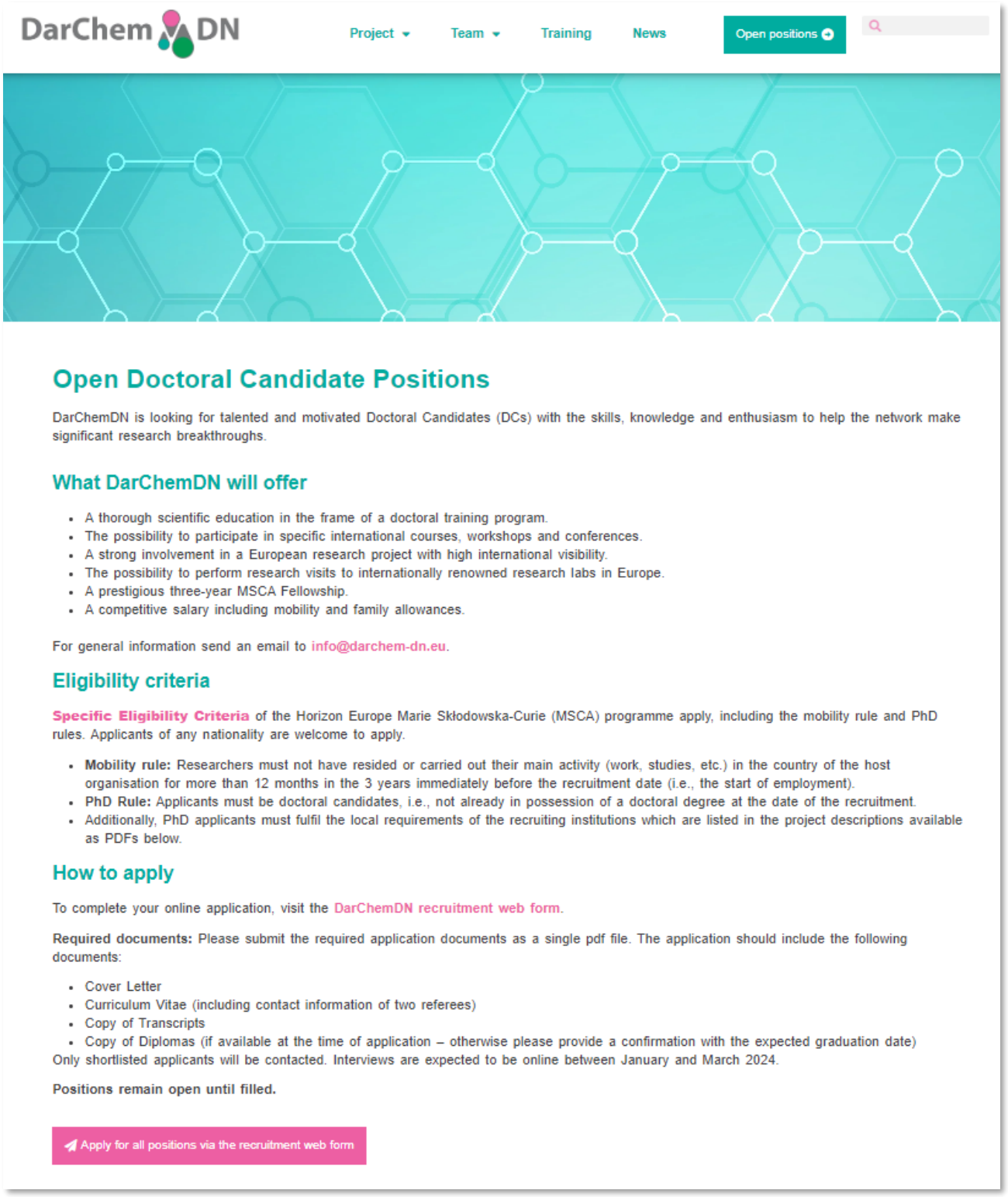
Sijbren Otto received his M.Sc. (1994) and Ph.D. (1998) degrees cum laude from the University of Groningen in the Netherlands, working on physical organic chemistry in aqueous solutions with Prof. Jan B. F. N. Engberts. Following postdoc positions with Prof. Steven Regen (Lehigh University, Bethlehem, Pennsylvania) and Prof. Jeremy Sanders (University of Cambridge, UK), he started his independent research career in 2001 at the University of Cambridge. He returned to the University of Groningen in 2009 where he is currently professor of systems chemistry.

His research addresses the question how properties normally associated with living systems can arise from mixtures of synthetic molecules. The Otto lab developed a new class of self-replicating molecules that not only catalyze their own formation, but can also accelerate an increasing number of other reactions. This includes reactions that produce the molecules from which the replicators grow (akin to metabolism) and molecules that assemble into droplets, which the replicators then enter, yielding primitive cell-like constructs. The Darwinian evolution of these synthetic systems is currently one of the main themes investigated by the group.

Selected publications

- Carnall, J. M., Waudby, C. A., Belenguer, A. M., Stuart, M. C., Peyralans, J. J. P., & Otto, S. (2010). Mechanosensitive self-replication driven by self-organization. *Science*, *327*(5972), 1502-1506. https://doi.org/10.1126/science.1182767
- Sadownik, J. W., Mattia, E., Nowak, P., & Otto, S. (2016). Diversification of self-replicating molecules. *Nature chemistry*, *8*(3), 264. https://doi.org/10.1038/nchem.2419
- Monreal Santiago, G., Liu, K., Browne, W. R., & Otto, S. (2020). Emergence of light-driven protometabolism on recruitment of a photocatalytic cofactor by a self-replicator. *Nature Chemistry*, *12*(7), 603-607. https://doi.org/10.1038/s41557-020-0494-4
- Ottelé, J., Hussain, A. S., Mayer, C., & Otto, S. (2020). Chance emergence of catalytic activity and promiscuity in a self-replicator. *Nature Catalysis*, *3*(7), 547-553. https://doi.org/10.1038/s41929-020-0463-8
- Yang, S., Schaeffer, G., Mattia, E., Markovitch, O., Liu, K., Hussain, A. S., ... & Otto, S. (2021). Chemical fueling enables molecular complexification of self-replicators. *Angewandte Chemie*, *133*(20), 11445-11450. https://doi.org/10.1002/anie.202016196

Website: Open Positions page



Open Positions

DC1: Emergence of selection in nucleopeptide replication networks

Ben Gurion University of the Negev (BGU)

Ben-Gurion University of the Negev

Laboratory for Systems Chemistry

Be'er Sheva, Israel

Supervisor: Prof. Gonen Ashkenasy

Download Job Description

DC2: Theory of identification, selection and evolution of autocatalytic networks

Parmenides Foundation (PARM)

Center for the Conceptional Foundations of Science

Pöcking, Germany

Supervisor: Prof. Eörs Szathmary

PARMENIDES FOUNDATION

Download Job Description

DC3: The compartmentalised formose reaction

École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI)

Laboratoire de Biochimie

Paris, France

Supervisor: Prof. Andrew Griffiths

ESPCI PARIS

Download Job Description

DC4: Feedback of compartmentalisation on reactions

University of Saarland (USAAR)

Center of Human and Molecular Biology

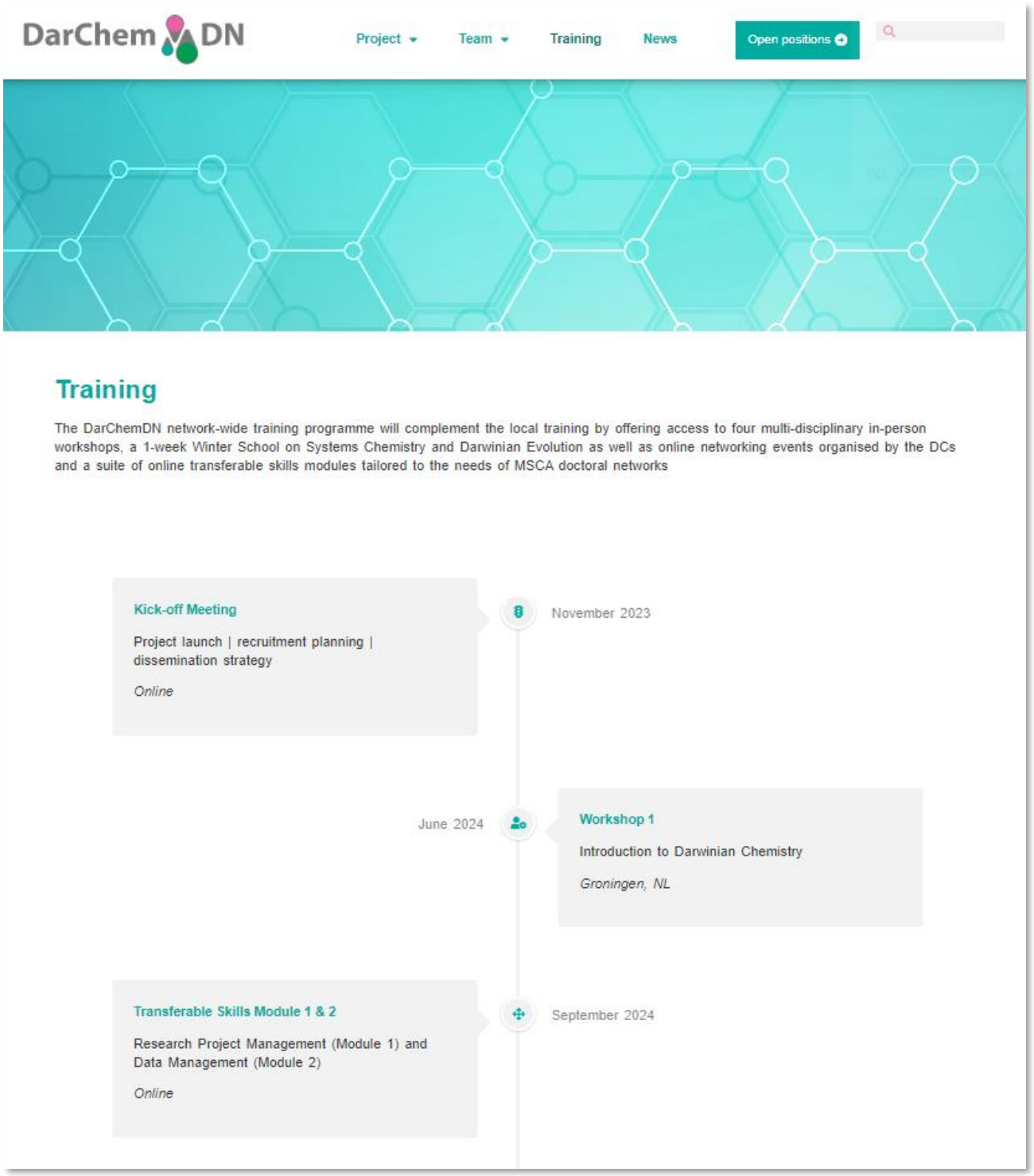
Saarbrücken, Germany

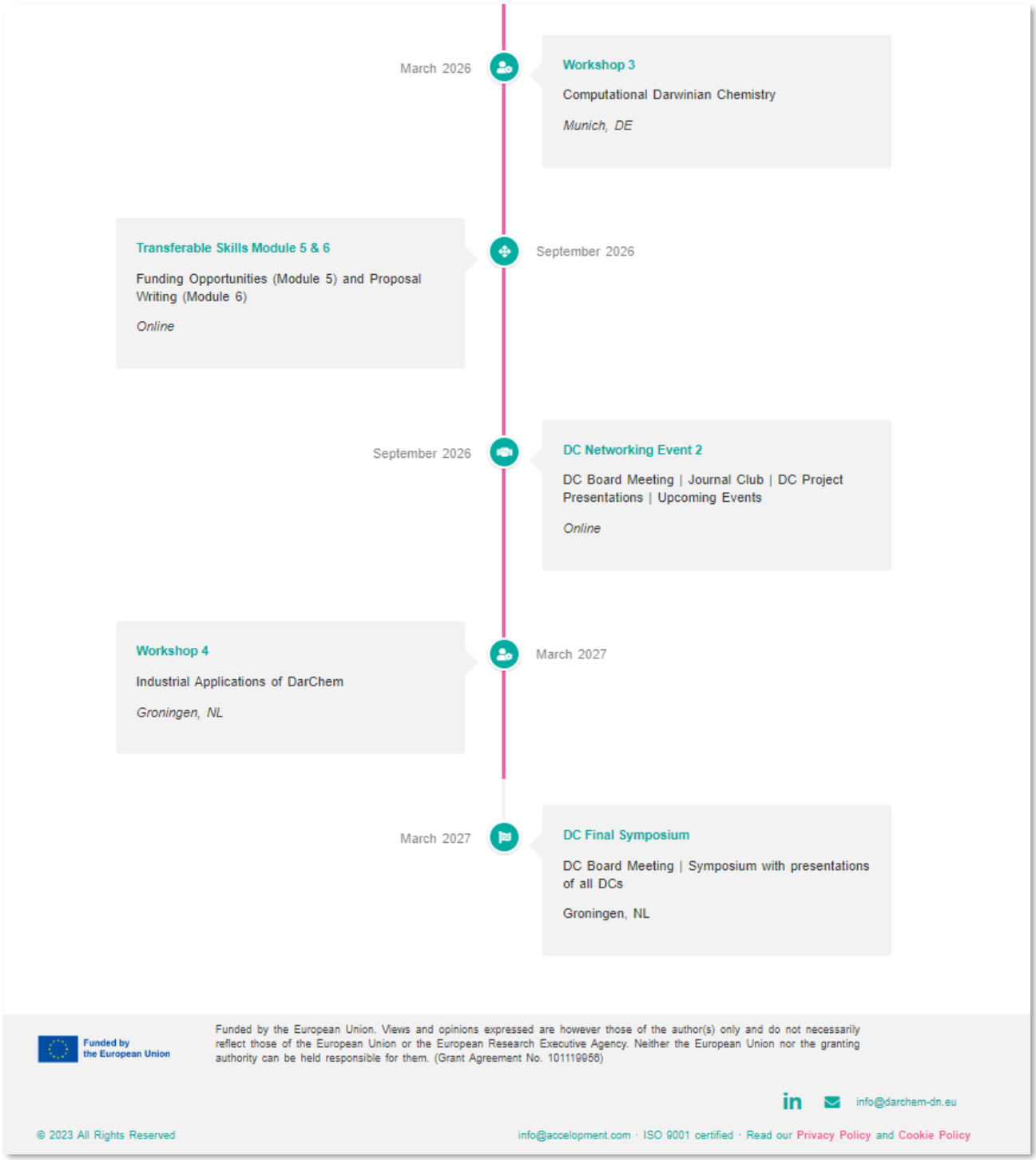
Supervisor: Prof. Dora Tang

UNIVERSITÄT DES SAARLANDES

Download Job Description

Website: Training timeline




March 2026
Workshop 3
Computational Darwinian Chemistry
Munich, DE
Transferable Skills Module 5 & 6
Funding Opportunities (Module 5) and Proposal Writing (Module 6)
Online
September 2026
September 2026
DC Networking Event 2
DC Board Meeting | Journal Club | DC Project Presentations | Upcoming Events
Online
Workshop 4
Industrial Applications of DarChem
Groningen, NL
March 2027
March 2027
DC Final Symposium
DC Board Meeting | Symposium with presentations of all DCs
Groningen, NL
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LinkedIn post: Example recruitment post