

MARIE SKŁODOWSKA-CURIE ACTIONS

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# APPLICANTS GUIDE

“PRISMAS”

PhD Research and Innovation in Synchrotron Methods and Applications in Sweden

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PRISMAS



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## 1. ABOUT PRISMAS

### 1.1. SUMMARY

PRISMAS (PhD Research In Synchrotron Methods and Applications in Sweden) is newly developed doctoral training programme funded under the Horizon-MSCA-COFUND-2021 Call.

It aims to educate the next generation of scientists in advanced synchrotron methodologies in order to tackle some of the world most pressing sustainability development goals and meet the challenges of the future. 40 doctoral students will be hosted at 8 Swedish Universities with a mandatory secondment at MAX IV.

### 1.2. INTRODUCTION

PRISMAS is a programme for Doctoral students (DS) who strive to perform cutting-edge science research and be part of the next generation of experts in advanced synchrotron methodologies.

It ensures that the PRISMAS fellows can take full advantage of different synchrotron-based techniques in various domains ranging from experimental and theoretical physics, accelerator science, materials science, life science, medicine and health, environmental science, clean energy to cultural and geological heritage.

The PRISMAS programme, designed to build a career platform for mentorship programs and peer-to-peer networking in the synchrotron community, will educate a new generation of scientists and offer them opportunities for the development of their research careers, leading to the development of new solutions to the current societal challenges.

The programme will strengthen the network surrounding Swedish academia and MAX IV with regard to synchrotron methods for interdisciplinary, intersectoral and international research, and ensure Sweden can take the lead on educating the next generation of synchrotron experts, as the home to the world's first 4th generation synchrotron, and a hotbed for leading photon science.

PRISMAS programme is built upon three pillars: large research infrastructure (MAX IV), academia through Swedish universities and industry through associated partners and society as a whole in connection to the research areas/Sustainable Development Goals.

*PRISMAS will educate the next generation of X-ray scientists to tackle some of our most pressing sustainability development goals and meet the challenges of the future. It will create a broad, cohesive community of X-ray experts embracing all scientific disciplines and X-ray methodologies and enable a range of stakeholders to take full advantage of world-leading synchrotron facilities such as MAX IV in the future.*

The DS will be hosted by 8 Swedish Universities that will act as Implementing partners with a common mandatory secondment on-site at MAX IV for a duration of 3-12 months. This secondment will provide hands-on training in key synchrotron-based technologies and will establish the DS as experts in the field allowing them to participate in the advancement of synchrotron based-technologies of the future. The DS will get the opportunity to learn from experts in the field, network among each other across science areas, and will act as ambassadors to bridge between the facility, universities and industrial partners in the project. Additionally, they will be encouraged to further enrich their curriculum with short stays or additional secondments at the associated project partners. Having partners both from academia as well as industry, makes the PRISMAS programme interdisciplinary, intersectoral and international.

Characteristic for the project is the individually-driven mobility as the applicants choose their research project of interest in alignment with personal interest and further develop it with their future supervisors.

Other unique advantages of the PRISMAS programme are the common selection process among all implementing partners, the tailored training programme (PRISMAS graduate School with transversal and specific courses provided by the different participating Universities) as well as the unique hands-on training in synchrotron techniques, brought by the mandatory secondment at MAX IV, are described more in detail in the following sections.

**1.3. PARTNERS**

Being host for the mandatory secondment, MAX IV (Lund University) takes the role as project coordinator for the PRISMAS projects and its partners.

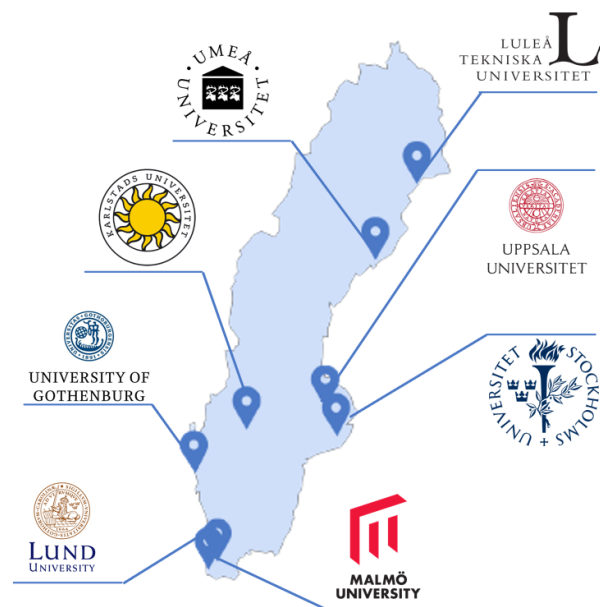
The mission of MAX IV is to provide the research community with world-class tools for synchrotron X-rays at the highest level of excellence and societal benefit, notably by including and serving the academic and industrial communities conducting research in applied as well as fundamental and basic science. These communities span a broad range of scientific fields from life science, chemistry, physics, environmental science, engineering, and materials science to cultural heritage.

8 Swedish universities are the implementing partners for the PRISMAS project and by that the hosts/employers of the PRISMAS fellows.

Details on the implementing partners and their locations are shown at the end of this guide.

Essential for the intersectoral, international and interdisciplinary orientation of the programme, are the about 43 associated partners. Having partners involved from academia as well as industry, offers unique career opportunities to the PRISMAS fellows and gives the basis to build up a life-lasting personal network.

Together with the project Principle Investigators (PI), the students are encouraged to arrange short stays or secondments at the associated partners, which will be customised to suit the needs of the PhD students in terms of knowledge enrichments in regard to technical matters related to their PhD project, intersectoral experience at a different type of institution (research center, industry), and international networking. The duration of this additional secondment will be defined considering the duration of stay at MAX IV and the needs of each of the students in relation to the project.



## 2. RECRUITMENT AND SELECTION PROCESS

### 2.1. TIMELINE

The application process for the PRISMAS positions is organized in 3 calls for recruitment allowing candidates to apply for the PRISMAS positions.

In each call, the applications for the PRISMAS positions need to be submitted through the application system of the respective university where the position is hosted. This implies that at each university will publish individually the job ads for hosted projects. Details on the eligibility criteria and documentation needed for the application, are shown below (2.2 ELIGIBILITY CRITERIA).

As soon as the application for the positions is opened, links to the respective positions will be provided on the [PRISMAS webpage](#), as well as in this guide in the section on the research areas.

Details on how the selection of the candidates is managed, can be found in the section on the selection process (SELECTION PROCESS AND EVALUATION CRITERIA).

The first call for recruitment was opened from the 1<sup>st</sup> March 2023 until the 2<sup>nd</sup> May 2023, advertising 27 of the total 40 positions. Right after the closing of the call the applications were reviewed in terms of their eligibility. By beginning of June, the evaluation of the applications took place, so that by end of June the interview phase could be started. In the period until end of July, the online and on-site interviews took place at local recruiting University level. With the end of the interview phase, the final candidates were selected and the details for employment were organized, so that ideally the employment could start by 1<sup>st</sup> of September.

The second call for recruitment was open from 1<sup>st</sup> of September 2023 until 31<sup>st</sup> of October 2023, aiming to recruit candidates for the remaining PRISMAS positions. The eligibility check of the applications was done immediately after the call closure, so that the evaluation of the eligible applications was started by November. After the evaluation, the online and on-site interviews took place in the period from mid-December until mid- January 2024. After setting everything in place, the employment of the chosen candidates could start ideally by 1<sup>st</sup> of March 2024.

The third recruitment call will open on 1st July 2024 and close on 31st August 2024. This call aims to fill the remaining PRISMAS positions. Immediately following the closure, an eligibility check of the applications will be conducted to allow the evaluation process to commence in September. Following the evaluation, online and on-site interviews will be held from late October until mid-November 2024. Ideally, the selected candidates will begin their employment ideally by 1st January 2025.

	<i>1<sup>st</sup> call</i>	<i>2<sup>nd</sup> call</i>	<i>3<sup>rd</sup> call</i>
<i>Open</i>	<i>01.03.2023 – 02.05.2023</i>	<i>01.09.2023 – 31.10.2023</i>	<i>01.07.2024 – 31.08.2024</i>
<i>Eligibility check</i>	<i>02.05.2023 – Mid June</i>	<i>01.11.2023 – 30.11.2023</i>	<i>01.09.2024 – 20.09.2024</i>
<i>Interview phase</i>	<i>July-August</i>	<i>Mid-December – Mid-January 2024</i>	<i>End of October – Mid-November</i>
<i>Start of employment</i>	<i>01.10.2023</i>	<i>01.03.2024</i>	<i>01.01.2025</i>

### 2.2. ELIGIBILITY CRITERIA

With PRISMAS being a MSCA-COFUND project, one objective of the programme is to support the international mobility of researchers. This implies that the PRISMAS fellows need to comply with the MSCA rules and eligibility criteria. The mobility rule implies that the student is only eligible for

participation in the PRISMAS programme if they have **not** resided in Sweden for more than 12 months within the last three years (1<sup>st</sup> call: Preceding to 2<sup>nd</sup> May 2023, 2<sup>nd</sup> call: Preceding to 31<sup>st</sup> of October 2023, **3<sup>rd</sup> call: Preceding to 31<sup>st</sup> August 2024**) for their main work or studies (unless as part of a procedure for obtaining refugee status under the Geneva Convention).

More information on MSCA and its benefits can be found here: <https://marie-sklodowska-curie-actions.ec.europa.eu/actions/cofund>.

As doctoral student in Sweden, the candidates need to have completed courses of at least 240 credits, of which at least 60 credits are from second-cycle courses, have been awarded a Master's degree or have acquired largely equivalent knowledge in some other way, in Sweden or abroad, latest by the start of employment (1<sup>st</sup> call: 01.10.23, 2<sup>nd</sup> call: 01.03.24, **3<sup>rd</sup> call 01.01.25**).

In addition to the above-mentioned criteria, the student needs to have fulfilled a second cycle education in a relevant research field, which is specified in the job ad of the respective PRISMAS position.

Furthermore, you are eligible for the PRISMAS programme, if you are a doctoral candidate, i.e., are **not** already in possession of a doctoral degree.

Additional local rules and eligibility criteria of the respective implementing partner will apply, as specified in each job ad.

### **2.3. APPLICATION PACKAGE**

To be considered for the selection process for the PRISMAS positions, the application needs to contain the following listed documents:

- 1. Curriculum vitae in the Europass format (maximum 4 A4 pages),**
- 2. Two-page cover letter with a motivation why the candidate has selected the research project and how the previous experience/background fits the position, including priority ranking if more than one application is done by the candidate,**
- 3. At least one reference letter,**
- 4. Scan of original official academic records (including marks for all coursework) and Diploma(s) and their translation in English (read more below),**
- 5. Evidence of English3 proficiency (minimum B2),**
- 6. Any additional document that the candidate considers important for the application.**

Academic records need to refer to the whole higher education period, Bachelor and Master Degree (if a combined Master course contains the Bachelor level, this needs to be explained in the CV and Cover Letter). Please be aware that the academic transcript of attended courses needs to be an official document issued by the Institution where you received your higher level education. The document needs to show the credits and corresponding grade you achieved. If the transcript does not show ECTS credits (because the system of the country where it was issued does not apply ECTS credits), please make sure to add a document explaining how the shown credits translate into ECTS (there are official pages clarifying this; otherwise the issuing institution should be able to clarify this point). Moreover, make sure there is an explanation of a maximum grade that can be achieved in your grading system. The explanatory document provided doesn't have to be an official one, it can be a statement by the applicant.

To prove that you are at an CEFR B2 level in English, the best way is to take a high-quality standardized test. See below for a list of common tests and corresponding B2 scores. You are free to provide any

other evidence of your English proficiency, and how this relates to B2 proficiency. It is our discretion to accept such non-standardized proof or not.

Test	B2 level score equivalent
EF SET	51 - 60
IELTS	5.5 - 6.0
TOEIC (R&L) Total	785 - 940
Cambridge English Scale	160 - 179
TOEFL iBT	72 - 94
Global Scale of English (Pearson)	59 - 75

In which format the above listed documents should be handed in might differ among the implementing partners. Details on that will be described in the job ads of the PRISMAS positions.

Evidence for the sufficient level of English can for example be test certificates of the common language tests for academic usage, such as TOEFL, IELTS (Specify which test and link to webpages). Besides those test certificates, also letter of curriculum of an English lecture on university level would be accepted. It is the applicants responsibility to prove that the provided documentation corresponds formally to a B2 level of English knowledge<sup>1</sup>.

A reference letter is a mandatory requirement upon application submission. In the exceptional cases when a candidate cannot provide a letter due to common practice in the country, requiring an employer to directly request one from a referee, the applicant needs to provide in their application a separate document titled "REFERENCES". Such document needs to contain information about one or more referees to be contacted. The contact information should contain a link to the referee's profile page on the institutional webpage of affiliation, a professional email address (not personal ones @gmail, @hotmail, @yahoo, etc.) and, optionally, a telephone number.

**In regard to incomplete applications (especially if lacking the abovementioned documents), the PRISMAS Management reserves the right to exclude them in the selection process, without any additional notification to the applicant.**

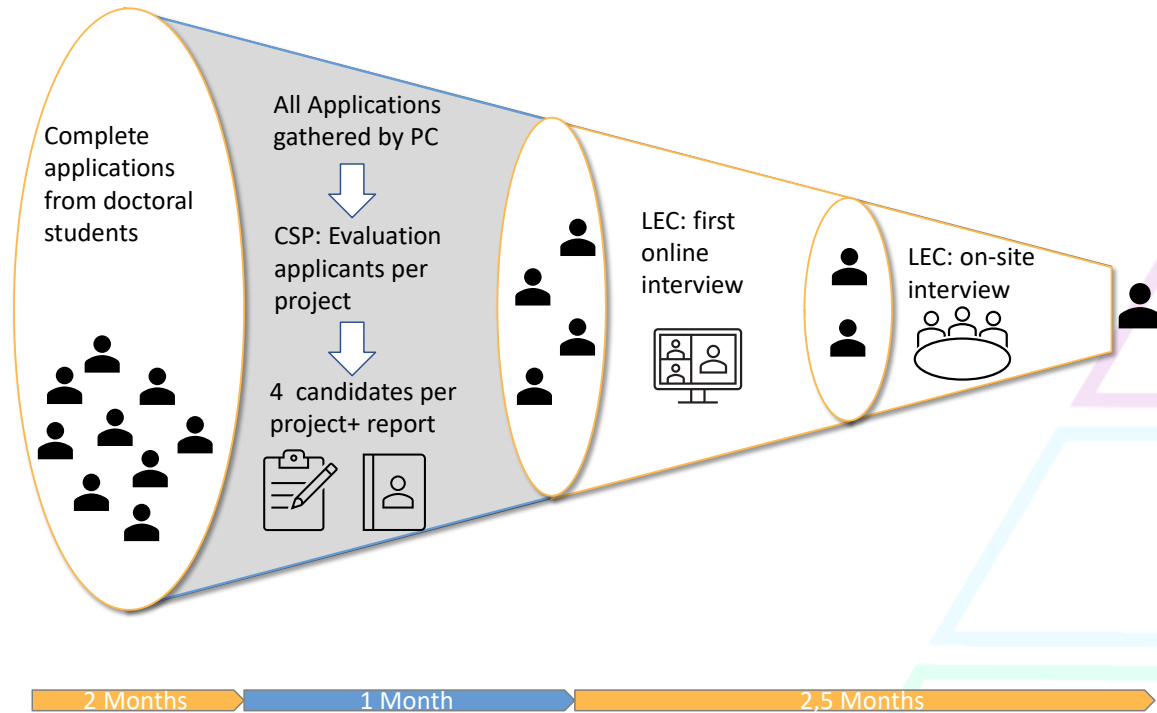
<i>Eligibility criteria</i>	<i>Application package</i>
<ul style="list-style-type: none"> <li><i>Mobility rule: Not resided in Sweden &gt;12 months in 3 years before call closure</i></li> <li><i>240 ECTS, of which at least 60 ECTS in scientifically relevant second-cycle courses Or Master Degree Or equivalent knowledge</i></li> <li><i>Second cycle education in respective research field</i></li> <li><i>Not already in possession of doctoral degree</i></li> </ul>	<ul style="list-style-type: none"> <li><i>Curriculum vitae in the Europass format,</i></li> <li><i>Two-page cover letter with motivation and priority ranking if apply for several PRISMAS positions</i></li> <li><i>At least one reference letter,</i></li> <li><i>Evidence of English<sup>3</sup> proficiency (minimum B2),</i></li> <li><i>Copy of academic records (including marks for all coursework) with a transcript of diploma in English</i></li> </ul>

<sup>1</sup> E.g. as per <https://tracktest.eu/english-levels-cefr/>

**2.4. SELECTION PROCESS AND EVALUATION CRITERIA**

The selection process is a harmonised and centralised process among all participating universities. The process involves qualified, external, independent experts at all stages guaranteeing the equality and transparency.

The below described selection process is followed for choosing candidates for all open positions at all research projects.



Candidates will file the application(s) for the project(s) of their choice through each university’s application system. In the applications systems job ads for the respective offered positions will be published.

After the call closure, a basic eligibility check of the submitted applications will be conducted. Content of this review is the fulfilment of the formal requirements for the PRISMAS programme. One criterium is here e.g. completion of the application package.

After this first review, the applications will be handed over to the PRISMAS project management team in order to review the content of the submitted application packages. Here the submitted documents will be reviewed in-depth, so e.g. relevance of the scientific background of candidates for the selected position.

Following the eligibility check, the eligible applications will be handed over to the Central selection Panel (CSP). For each research project a CSP is established. Details and the constitution of the CSP is described in the following section in this guide. The CSP evaluates all applicants for the research project and writes a report on the evaluation. The applications will be evaluated against the criteria listed in the table below.

To be considered for the interview phase, applicants must be awarded at least 80% of the selection points.



<i>Criteria</i>	<i>Weight</i>	<i>Sub-criteria</i>
<i>Scientific excellence</i>	<i>60%</i>	<i>Academic education and training, relevant courses and grades; Academic excellence (incl. prizes, publications, participation in international programmes such as Erasmus); Dual degree/diploma</i>
<i>Adequacy of the career plan and the thesis project</i>	<i>20%</i>	<i>Ambition both in relation to the PRISMAS Project/s applied for and in relation to the applicant's research interests more broadly.</i>
<i>Research experience</i>	<i>20%</i>	<i>Research environments within and outside of the Higher Education sector, as well as sectors and organisations which are impacted by research outcomes.</i>

Based on these evaluations, a ranking of the applications will be composed. To finalize the rankings of each position, meetings will be organized with the evaluators, the PRISMAS Director of studies and possibly one member of the MAX IV PAC. Meetings will be grouped per research area and a ranking of candidates will be defined for each position.

With this finalized ranking of applications, the applications of the top ranked candidates will be handed over to the respective Local Evaluation Committees (LEC).

For each research project, a LEC will be established at the respective institution. Details and the constitution of the LEC is described in the following section in this guide. The main objective of the LEC is conducting the interviews with the top candidates for the respective position.

In first place, online interviews will be conducted with the top 4 ranked candidates. These interviews will be evaluated based on the criteria described in the table below. Based on these evaluations, two candidates will be chosen for on-site interviews, providing that each of them reached a minimum of 80% of the interview points.

The chosen candidates will be contacted by the implementing partner to schedule the on-site interview. This on-site interview gives the candidates the chance to meet with the PI and HR representatives and be introduced to the working environment. The implementing partner is ought to take the travel expenses. If in-person meetings are not possible (e.g. due to VISA-related matters), longer and more thorough online interviews will take place to fulfil as much as possible the abovementioned goals of the on-site meeting. Finally, the LEC chooses the candidate for the research project.

At all stages the candidates will be informed on the status of the application.

<i>Criteria</i>	<i>Weight</i>	<i>Sub-criteria</i>
<i>Motivation</i>	<i>40%</i>	<i>Analysing their knowledge of the environment of the position they are applying for.</i>
<i>Career prospects</i>	<i>35%</i>	<i>Adequacy of their profile with the research topic and challenging their future career.</i>
<i>Communication</i>	<i>15%</i>	<i>Ability to communicate in English concerning the potential societal and outreaching impact of the PRISMAS research project they are applying for. Critical thinking skill demonstrated.</i>
<i>3I potential and open science</i>	<i>10%</i>	<i>Willingness and potential to work in an interdisciplinary, intersectoral and international context. Open science approach.</i>

**2.5. COMPOSITION OF SELECTION COMMITTEES**

In the following section an overview of the composition and competencies of the committees involved in the selection process of candidates is given.

Central Selection Panel

For each research project a Central Selection Panel (CSP) is established. It consists of three external (not affiliated to the hosting Implementing Partner) experts of the respective research field.

In order to ensure a non-biased selection process, the PI of the respective project has no information on the constitution of the CSP and is not involved in the first evaluation stage.

An overview of the general information, competencies and the composition of the CSP is given in the illustration below.

Local Evaluation Committee

For each open position, a LEC is established on local level at the respective implementing partner. The LEC consists of the main PI of the research project, one of the experts who have evaluated the applications in the first step and one local HR representative. Additional committee members might participate as per local rules.

	PRISMAS Central Selection Panel	Local Evaluation Committee
General Information	<ul style="list-style-type: none"> <li>• One panel per research project</li> <li>• Future PIs have no information on composition</li> </ul>	<ul style="list-style-type: none"> <li>• One panel per research project</li> </ul>
Competencies	<ul style="list-style-type: none"> <li>• Evaluation of applicants based on PRISMAS criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Conducting interviews</li> <li>• Final decision on applicant based on PRISMAS criteria</li> </ul>
Composition/ Members	<ul style="list-style-type: none"> <li>• Min. 3 evaluators</li> <li>• 1 representative of implementing and associated partners</li> <li>• 2 independent experts (out of MAX IV international committees)</li> <li>• In case additional members appointed by PMT</li> </ul>	<ul style="list-style-type: none"> <li>• Main PI</li> <li>• 1 external expert (out of MAX IV international committees)</li> <li>• 1 local HR representative</li> </ul>

**2.6. REDRESS PROCESS**

As part of the unique and common selection process, the candidates will be updated at every stage of the process on the status of their applications.

After the first step, the eligibility check, the candidates will be notified by the PMT of the decision concerning the eligibility of their application. In the event of the application being unsuccessful, reasons for its rejection will be given to the candidate concerned. If the applicant wishes to communicate new elements, he/she has the right to appeal to the PMT (within 5 working days), whose decision on any application will be final.

After receiving feedback on the evaluation of their application, the applicants can initiate a request for redress within 10 working days after each results communication. Requests must be sent by email and be related to the evaluation process, or eligibility checks, including a clear description of the grounds for complaint and be received within the time limit specified in the call. The PRISMAS PMT will process and examine the requests and handle them within the Redress Committee, involving HR representatives of Local Evaluation Committees. They will decide and provide a definitive reply.

The decision for the final candidate and with that the decision on admission to education on research degree cannot be appealed (according to Högskoleförordningen chapter 12 § 2<sup>2</sup>).

## **2.7. EQUAL OPPORTUNITIES**

Gender dimensions and diversity aspects are strongly regulated by Swedish law and are established in the ethical guidelines for MAX IV as well as all Implementing Partners.

Besides democratic values and equal opportunities independent of gender, ethnic and social background, project Partners are continuously working to reach gender balance at all levels of employment. Applications from all ethnic groups are encouraged and evaluated by external experts with no bias. The external application reviewers are asked to sign confidentiality and conflict-of-interest statements.

PRISMAS partners are committed to follow the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers. Swedish universities and colleges must, according to the Swedish law, in their activities, always observe and promote gender equality.

Furthermore, supervisors within the programme will be provided training in equal opportunity matters and asked to reflect over how they actively work to support gender balance and equal opportunities for all students in a written essay.

The PRISMAS calls will be disseminated all around the world and will thus cover a wide range of nationalities, avoiding any discrimination while respecting the mobility rules of the European Union.

## **2.8. ETHICAL GUIDELINES/ ISSUES**

In the selection of research projects to be offered within the PRISMAS programme, ethical issues will be assessed. If queries or conflicts arise for some applications, additional independent experts will be involved. If a research project presents ethical issues, the PI will be informed, and the necessary authorization shall be communicated to the experts before the final validation of research projects list.

Should an ethical issue be raised during progress of project, the PMT will mandate ethics expert to help students and supervisors in solving ethical issues.

## **3. EMPLOYMENT CONDITIONS**

### **3.1. ONBOARDING**

To assure a smooth onboarding of the PRISMAS fellows at the respective universities, the HR services at each of the 8 universities will assist with the administrative formalities. They will help to prepare the arrival in Sweden regarding VISAs, bank account, social security and Swedish administrative system and with that to fulfil all bureaucratic requirements necessary for the employment and relocation to Sweden.

In addition to that, to each PhD student a PhD “buddy” will be appointed. This “buddy” is a colleague from the host department that will help to favour a smooth integration and give advice with everyday matters.

Finally, though the PRISMAS fellows will arrive in an English-speaking environment, they may take advantage of Swedish lessons in order to learn quickly how to communicate in their personal life.

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<sup>2</sup> Admission rules for doctoral education at Lund University, chapter 5 (Reg. no STYR 2021/2700): <https://www.lusem.lu.se/staff-pages/media/studies/phd/regulations/Antagningsordning-fu-eng.pdf>

### **3.2. WORK CONTRACT AND SALARY**

The PRISMAS fellows will be employed at the respective hosting implementing partner. As the average duration for PhD studies in Sweden is 4 years, the PRISMAS fellows will be offered a 48-month PhD student contract by the respective university.

The PRISMAS PhD students will be paid a monthly salary in Swedish crowns as per agreement with Unions. The salary will increase gradually during the 4-years employment and result in an average salary of approximately 3000€. This is aligned with the institutes' general salary ladder and increases. Student employments in Sweden are regulated by collective agreements ("Kollektivavtal") and include social benefits.

### **3.3. SOCIAL AND HEALTH INSURANCE AND TAXES/WORKING CONDITIONS, INSTITUTIONAL ADMINISTRATIVE SUPPORT**

The students will be employed by the university, where the respective research project is placed. As regulated by law in Sweden, employees are given exceptionally favourable and family friendly working conditions. As the average duration for PhD studies in Sweden is 4 years, the PRISMAS fellows will be offered a 48-month PhD student contract by the respective university. The contract will, by Swedish law, imply also social benefits paid by the employer. The taxes paid by the individual employee in Sweden are depending on the municipality (List of local taxes: [Local tax rates 2024, by municipality \(revised 2024-05-21\) \(scb.se\)](#), link to tax calculator: [Sweden Salary Calculator 2024 with Income Tax Brackets - Investomatica](#)). The corresponding amount of taxes is deducted monthly from the salary finally received by the employee. A yearly tax declaration is done when the amount of taxes paid is reviewed by the tax agency and the individual.

*For facilitating the start in Sweden, exceptional support will be offered by the respective HR departments of the implementing partners. Besides outstanding opportunities as well as a stimulating and inspiring surrounding for performing cutting-edge research, PRISMAS also offers a competitive salary to the fellows. Furthermore, the fellows will get to enjoy the benefits of an outstanding supervision by the project PIs, co-supervisors at associated partners as well as at MAX IV during the secondment.*

## **4. SUPERVISION, TRAINING AND CAREER DEVELOPMENT**

### **4.1. SUPERVISION ARRANGEMENTS**

Every PRISMAS fellow will have a main supervisor, who is the PI of the research project and located at the host university. Each supervisor is either an associated or full professor and has a significant scientific track record in the respective field as well as pedagogical competencies. Additionally, there will be academic co-supervisors either at the host university or at one of the associated partners. During the mandatory secondment at MAX IV, the PRISMAS fellows will be supported by an additional mentor at MAX IV.

The supervisors will be available for project supervision, approximately 3-4 hours a week.

Each PRISMAS fellow will have a yearly staff appraisal with a representative of the respective department, which is not the supervisor. This is a major and standard part of the quality assurance system for doctoral studies at Swedish universities and thus is a common procedure at all implementing partners. During the appraisal issues such as: the students research studies, departmental duties such as teaching, supervision, the physical work environment and the psychosocial work environment are reviewed.

An additional level of review that is required for the Swedish doctoral degree is the half-time PhD review. The half-time review is done after two years of PhD work and is similar to a thesis defence. Thus, it will include international and national expert reviewers and is an occasion for the DS to present their work and obtain constructive feedback and guidance for further thesis work.

In this way many layers of support will be available to each of the DS that can support DS in potential conflicts and provide invaluable feedback for their progression.

**4.2. PRISMAS TRAINING PROGRAMME**

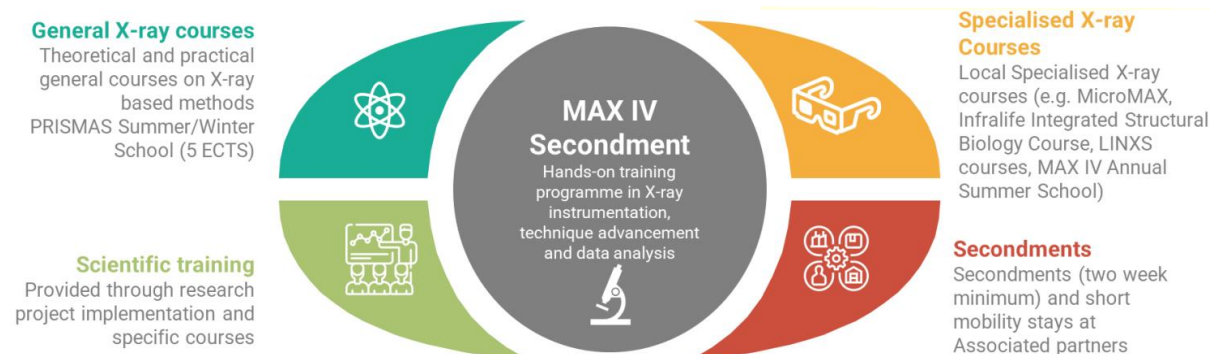
PRISMAS Graduate School

MAX IV and the consortium of Implementing Partners will equip PRISMAS fellows with a strong interdisciplinary research approach, an entrepreneurial, curious and creative spirit coupled with considerable persistence, exigency and ambition in pursuing their objectives.

The PRISMAS Graduate School will be purposefully developed as a tailored training programme to equip the DS with the skills, knowledge and conditions to perform state-of-the-art research work to the highest scientific standards and to train them with the specific skills and experience that put them in demand by future employers in both industry and academia. The entire training program is designed to ensure that the fellows fulfil the criteria for a doctoral degree defined by the Higher Education Ordinance in Sweden.

The PRISMAS Graduate School relies on the combination of the following activities:

- (1) scientific and technical training,
- (2) complementary skills development,
- (3) networking,
- (4) mentoring and career guidance,
- (5) intersectoriality,
- (6) interdisciplinarity and
- (7) international mobility



Scientific / technical training and complementary skills development

The Implementing partners together with MAX IV will offer a portfolio of courses that will pertain to both scientific and technical competence building, entrepreneurship and innovation, and other transferrable skills such as communication, ethics and pedagogy. In addition to that, the fellows will be trained to gender balance and equal opportunities in research. The Graduate School curriculum is

designed to prepare the DS with the skills most valued by future employers, as well as the most useful courses for their scientific work.

All of the courses offered by the PRISMAS Graduate School will be made open to all of the PRISMAS fellows and will allow them to network, enable peer-to-peer mentoring, exposure to other research environments to further their career development, provide opportunities for intersectorality and interdisciplinarity.

### Networking

PRISMAS will organise an Annual Meeting, gathering consortium participants, around supervisors and fellows. During this event, DSs will share their research outcomes, through scientific presentations as well as posters, to the assembly. The Annual Meeting will be held in Lund as an opportunity for all DS, PIs, programme management (including Scientific Advisory Board), programme staff and MAX IV scientists to network and review project advancement. This will also be a time for the Steering Group to ensure that the programme is developing according to set goals.

Other networking opportunities may be proposed at any time by the Students collegium, which the PRISMAS fellows are asked to create.

### Mentoring and career guidance

All DS will be encouraged to enrol into the mentorship programs available at all Implementing Partners, involving mentors from both academia and industry, giving them an opportunity for personal development.

Furthermore, the PRISMAS fellows will benefit of a synergic effect with the COFUND post-doc programme GNeuS (GA 101034266).

*The PRISMAS fellows will be part of designing the future of synchrotron technology and instrumentation and using these to tackle some of the most significant global challenges the world faces today while acquiring interdisciplinary and intersectoral knowledge. Through the strong exposure and thanks to the opportunity to connect to the involved industrial, academic and institute partners, fellows will be given significant perspectives for their future careers. Complemented with a tailored training programme, including courses to build scientific and technical competence as well as strengthen transferrable skills, PRISMAS provides the students with the skills, knowledge and competence needed to successfully achieve your doctoral degree.*

### Interdisciplinary research options, intersectorality and international networking

The **interdisciplinary nature** of research at MAX IV is indisputable and has been recognised as a major asset of synchrotron technology. With users conducting research in below listed research areas and scientists of the respective fields participating jointly in research projects, MAX IV is given a remarkable capacity to respond to major societal challenges. The PRISMAS fellows will thus be immersed in the multi-disciplinary world, both with their projects and their environment. The channel allowing them one-week intense courses on synchrotron techniques will be PRISMAS summer/winter schools focused on thematic areas.

**Intersectoral exposure increase** is one of the 2030 roadmap goals of MAX IV, with a target to increase the industrial use of MAX IV in collaboration with academia or other research institutes. Involving the Industrial relations office (IRO) of MAX IV, in the PRISMAS Programme management team, gives additional opportunities for the PRISMAS fellows. The IRO gathers industry, academia and institutes in a joint effort to target selected science areas. Moreover, fellows will be exposed to the personal

network of their supervisors and colleagues at the host department, linking them to valuable collaborations to industrial partners working in fields of special relevance for their expertise.

**International networking** is also a specific target for the PRISMAS fellows. Through participating in several EU projects with large consortia of about 20 members involving other synchrotrons, academia and industry, MAX IV built an extensive international network. Relying on this network, the PRISMAS fellows have the opportunity to take the chance for conducting secondments at international hosts, seeing them also as potential employment sites in the future and with that, accelerators for their future careers. PRISMAS will support the mobility of the fellows by funding travel and participation in international conferences, helping them to create their own international networks.

#### **4.3. SECONDMENT AT MAX IV**

The core of the PRISMAS scientific and technical training plan is the infrastructure secondment at MAX IV where each DS will spend between 3-12 months.

The time designated to this secondment and the technical content will be defined by the DS, the supervisor at the Implementing Partner institution and MAX IV scientific staff in order to guarantee that the DS gets the best possible training and takes full advantage of the potential of this exceptional experience. PRISMAS offers then a unique opportunity to the recruited DS to become “temporary staff” of the facility, develop their project with tools on the forefront of science, be integrated in the MAX IV community through participation in staff meetings commenting on technical matters and weekly scientific seminars.

Being involved in the experiments at the beamline gives the DS exceptional insights in the work at a synchrotron and therefore extensively benefits for their future scientific career.

On the other hand, the secondment is fully integrated in the scientific training provided by the PIs at Implementing partners that will offer the DS an excellence-based scientific education based on advanced-technology and competitive and interdisciplinary environments.

Besides the above mentioned, the secondment gives the DS an outstanding opportunity to get access to the synchrotron community as well as unique possibilities to enable life-long personal networks by interaction with on-site users.

As described in the previous section, MAX IV is in its nature perfectly matching the interdisciplinary, intersectorality and international networking character of the PRISMAS programme.

*During the secondment the doctoral students will become “temporary staff” at MAX IV. Through this strong exposure and thanks to the opportunity to connect to the involved industrial, academic and institute partners, fellows will be given significant perspectives for their future careers.*

#### **4.4. CAREER DEVELOPMENT**

Within the PRISMAS programme, the DS will be trained on formulating and setting goals for their future career and achieving them by following the best fitted trainings, in a pro-active and conscious initiative. Those actions will be summarized in their Career Development Plan (CDP). In addition to that it will contain their research plan and feedbacks from the annual thesis reports, as well as the personal training programme (lectures and courses in PRISMAS Graduate school) and a record of their secondments. The CDP will allow the DS to manage their research project's, monitor possible risks or opportunities and be aware of their areas of improvement.

Considering the wide set of skills, experience and networking the PRISMAS fellows will be exposed to, after completing their PhD, they will have an outstanding and competitive curriculum allowing them to choose the sector and field of their choice, aiming at ambitious future projects and well-paid positions.

MAX IV supports this by reflecting the full chain of scientific discovery (research activities, but also outreach and training), the DS will be equipped with a unique skill set, multidisciplinary and multi-sectoral training from leading academic, non-academic and industrial partners, allowing to maximise their potential.

#### **4.5. DISSEMINATION AND COMMUNICATION**

The transition towards an open science system in Europe sets high requirements on data management at research infrastructures. The Swedish Research Council, one of the main research funding bodies in Sweden, strongly supports open access and FAIR data management<sup>3</sup> and encourages the entire research community to adhere to the guidelines proposed by the European Commission<sup>4</sup>. This applies of course to the PRISMAS implementing partners as well as to MAX IV. In addition, MAX IV participates in ExPaNDS (European Photon and Neutron Data Services; GA 857641), which supports FAIR principles via a framework providing tools for researchers to access and analyse data from European photon and neutron facilities. PRISMAS fellows will be fully integrated in these initiatives.

Following these initiatives, the PRISMAS fellows will be requested to ensure Open Access to all their peer-reviewed scientific publications relating to their results through either directly publishing in OA formats or by utilizing Green OA repositories. They will also be expected to disseminate their results at different levels as widely as possible.

Within the PRISMAS programme they will be trained according to EU obligations (notably for Horizon Europe programmes) to ensure open access publications for their results. Complementary to that, they will be also trained about IP routes and will be sensitized from the beginning to think about early identification of their discoveries and protection in order to make them aware of intellectual property protection rights and exploitation paths.

In addition to the dissemination of outcomes, the PRISMAS PMT will deliver to all fellows a document describing the data management (DM) life cycle for the data that will be collected, processed and/or generated within each individual research project, at the university, MAX IV, and secondment levels.

### **5. RESEARCH AREAS**

PRISMAS is the next step forward guaranteeing human power for further developments and the training of a new generation of synchrotron science researchers.

Through the PRISMAS programme, MAX IV is committed to help develop the next generation of scientists and industry leaders while supporting and advancing Swedish and international academic and industrial research in various areas. Focus is given to research aiming to develop a more sustainable future in line with the UN's Agenda 2030 Sustainable Development Goals (SDGs).

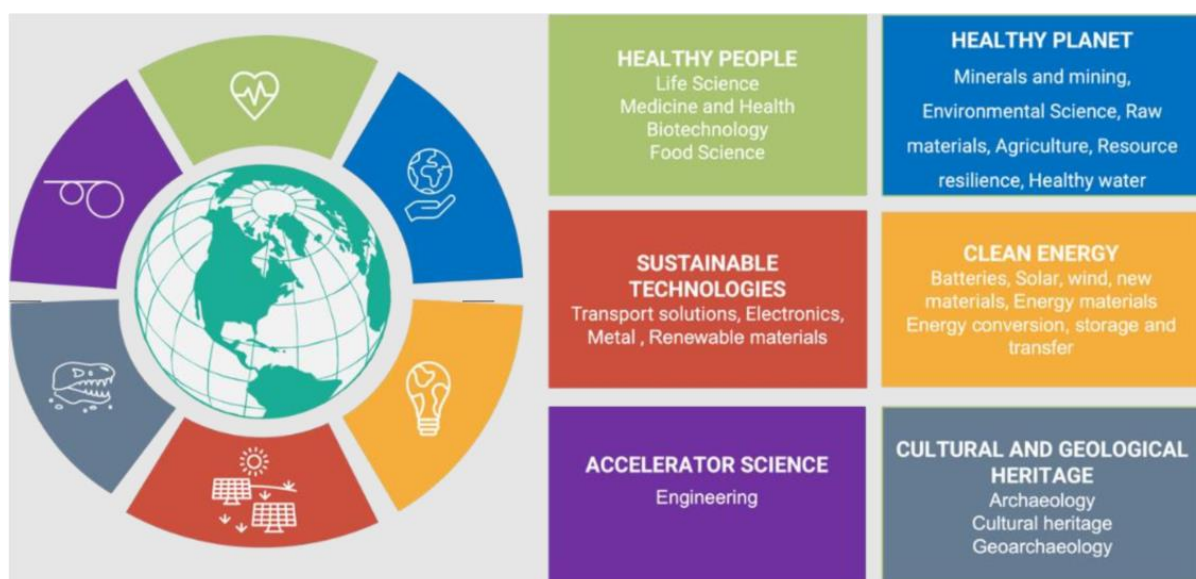
The 6 research areas are based on the UN's Agenda 2030 Sustainable Development Goals and the key research and innovation areas for Horizon Europe (see Fig. 1).

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<sup>3</sup> <https://www.vr.se/english/just-now/news/news-archive/2021-11-24-new-features-in-open-access-and-fair-data-management.html>

<sup>4</sup> <https://www.vr.se/english/mandates/open-science/open-access-to-research-data/the-swedish-research-councils-recommendation.html>





### 1 Sustainable Development Goals, UN Agenda 2030

Furthermore, the PRISMAS programme comprises three transversal areas that entail all the science focus areas, designed to encompass

- (1) the development of synchrotron-based methods to enable in situ, in operando and time-resolved experiments, in this way exploiting the specific characteristics of the exceptional coherence and brilliance of the MAX IV synchrotron,
- (2) the development of streamlined and easy-to-use software and data analysis tools tailored to both academic and industrial needs and
- (3) collaboration with both the public and private sectors to ensure MAX IV is developed further for a competitive Sweden and Europe.

Below is given some important assets of each selected science focus areas.

#### 5.1. **Healthy people**

Healthy People area gathers around the life sciences, with focus on medicine and health. Through its brightness, MAX IV was designed to provide breakthrough capabilities to the life sciences from the beginning, enabling studies of macromolecules such as proteins, biosystems, and the soft matter that makes up all biological matter on this planet. High level of sophistication and maturity has already been built when it comes to diffraction-, scattering and imaging techniques that have great potential in the areas of medicine and health sciences. Several of the beamlines available at MAX IV are developed to enable mapping molecules and cell systems that are responsible for the underlying mechanisms of diseases, and to study the elements of biological matter over previously inaccessible length- and timescales.

The PRISMAS programme enables researchers to directly contribute to advancing knowledge of regulation of protein transport across cellular membranes which is of importance for human health. Additionally, and through collaboration with other infrastructures ESS and SciLifeLab, partners in the PRISMAS project, they will be recognized as contributors to position Sweden and consequently Europe as a top player in Medicine and Health. Such an environment on the forefront of scientific advancement and in collaboration with a number of relevant actors will strengthen DS curriculum guaranteeing successful career development.

*Unfortunately, no project is being offered in this research area for the 3<sup>rd</sup> call.*

### 5.2. Sustainable Technologies

Within the transition to a sustainable, carbon-neutral, resource-efficient, and ultimately regenerative circular economy, which requires breakthrough developments in several areas including e.g. photovoltaics, artificial photosynthesis, fuel-cells, batteries and supercapacitors, hydrogen storage and bioenergy as well as other and novel types of materials. Synchrotron techniques have historically played a large part in the development of the underpinning energy related science. The continuous development at MAXIV will allow for better and more comprehensive investigations at the atomic scale, mapping energy conversion processes, be more sensitive to interactions and structure at interfaces, and provide leaps in the power of characterisation of materials at different scales.

Being a young researcher within the PRISMAS programme gives you the chance to be directly involved in the development of new sustainable technologies via phenomena that will be exploited to realise new capabilities and unprecedented function for novel materials.

<i>Sustainable technologies project</i>	<i>Host Univ.</i>	<i>PI</i>
<i>Identifying Active Sites in Electrochemical Ammonia and hydrocarbon Synthesis via In Situ APXPS and XAS</i>	<i>Stockholm University</i>	<i>Jiayin Yuan</i>

### 5.3. Accelerator Science

Necessary for the entire experimental program of MAX IV, accelerator science is the source of its light and at the core of the facility. A vital research area of its own, it is a source of future competitiveness and breakthroughs at the MAX IV Laboratory. The accelerator science programme at MAX IV will build on the successes that saw the world's first development of a 4th generation synchrotron source – a feat now being emulated at facilities worldwide. The MAX IV plan for accelerator science sets us firmly on the path towards the next generation sources and new ways to generate light for science, pushing the boundaries for coherence- and brightness driven X-ray science.

The PRISMAS programme gives the young researchers the chance to directly contribute to the next generation synchrotron source development and become a global expert.

*Unfortunately, no project is offered in this research area for the 3<sup>rd</sup> call.*

### 5.4. Healthy planet

Today the world is facing many environmental challenges. Environmental science investigates the complex system of the natural environment, including the anthropogenic impact. To advance environmental science there is a need to study complex, real samples and systems as far as possible and move away from simple models. Moreover, the processes involved occur over many different time and length scales. An example is the investigation of the uptake and distribution of chemicals, nutrients and pollutants in soil, or the role of organisms or cells in in-situ soil reactions, specialized controlled sample cells are required in combination with high chemical and spatial resolution.

As a young researcher in the PRISMAS programme you can directly tackle environmental challenges, and thus the UN's Agenda 2030 Sustainable Development Goals which are an essential part of four out five missions in the Horizon Europe funding programme.

<i>Healthy Planet projects</i>	<i>Host Univ.</i>	<i>PI</i>
<i>Chlorine Surface Activation Mechanism on Wildfire Smoke Particles and Its Relevance to Stratospheric Ozone Depletion</i>	<i>University of Gothenburg</i>	<i>Xiangrui Kong</i>

<i>Aerosol particle surface characterization in-situ for enhanced atmospheric science</i>	<i>Lund University</i>	<i>Axel Eriksson</i>
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**5.5. Clean Energy**

The global transition to a sustainable, carbon neutral, and resilient future necessitates innovation in sustainable energy generation, storage, conversion, and transfer. Transport, manufacturing and construction require innovation across a large range of disciplines and technologies to reduce their carbon footprint. Synchrotron techniques have always played a large part in the development of the underpinning science and technology. MAX IV is uniquely positioned to assist with the next decade of breakthroughs in areas such as photovoltaics, batteries and supercapacitors, “Power to X” technologies, artificial photosynthesis, fuel cells, electrochemical and thermal CO2 reduction, thermal synthetic chemical production, electro fuels and more. Science in this area at MAX IV will be boosted in the next ten years by the improvement of existing beamlines and the development of new ones that can provide comprehensive investigations at the atomic- and nano-scale, map fast processes, increase sensitivity to interactions and structure at interfaces and provide leaps in the power of characterisation of materials and their electronic properties.

The PRISMAS programme directly involves the young researchers in the development of fossil-free energy production and sustainable energy infrastructure.

<i>Clean energy projects</i>	<i>Host Univ.</i>	<i>PI</i>
<i>Using magnetoionics and x-ray scattering to investigate energy materials under in-operando conditions</i>	<i>Uppsala University</i>	<i>Germán Salazar Alvarez</i>
<i>Bridging the gap between ultrafast and steady-state: Nanosecond optical pump and X-ray probe spectroscopy for chemical, bio-inorganic and materials sciences</i>	<i>Uppsala University</i>	<i>Philippe Wernet</i>

**5.6. Cultural and geological heritage**

Natural and cultural heritage is an area that is rapidly expanding in its use of synchrotron-based methods. It benefits from the non-invasive nature of synchrotron experiments that require little or no sample preparation, thus minimising the risk of modifications or contamination to the specimen. Compared to laboratory-based X-ray techniques, synchrotrons offer energy tunability, thus providing chemical sensitivity and controllable penetration power. In addition, the photon beams at MAX IV are highly collimated, allowing characterisation of samples down to the micro- and nanoscales. Finally, synchrotron radiation beams are orders of magnitude more intense than any laboratory source, enabling scientists to analyse considerably more samples and achieve statistically significant results.

The PRISMAS programme gives young researchers the chance to be directly involved in solving questions concerning major mass extinctions in the Earth’s history, providing insights into various flora and their response to changes in climate and other events such as asteroid impacts and volcanism.

*Unfortunately, no project is offered in this research area.*

## 6. CONTACT

### I. List of Universities

#### I.1. Lund University

About Lund University:

“Lund University offers an impressive range of high-quality research and education, made possible by our 8 400 staff members and circa 46 000 students. In recent years, Lund University has consistently ranked among the top 100 universities in the world. Working at Lund University means being employed at a truly top-notch university” ([Work at Lund University | Lund University](#)).

About Lund:

“Voted the best place to live in Sweden, Lund is a safe city with the healthiest and youngest population in the country.

The University is a strong influence on Lund city, and several university buildings are located in the heart of the city. The combination of businesses, students and researchers from around the world has given birth to Lund's unique character as a city of strong research-based global industries. The Malmö region, including Lund, is the 4th most inventive region in the world. Sweden's first and most successful research park, Ideon, is situated in Lund, and the country's two largest research ventures, MAX IV Laboratory and the European Spallation Source (ESS) are located here” ([City of Lund | Lund University](#)).



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3 <sup>rd</sup> Call projects	
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**1.2. Malmö University**

About Malmö University:

“Malmö University was founded in 1998. The young age of the academy has made the University a modern and flexible centre characterised by global engagement, community involvement, and a multidisciplinary, challenge-based approach to education, research, and collaboration. Technology and Society, Culture and Society, Education and Society – each name of the University faculties emphasizes Malmö University’s way of involving society- and global perspectives in the education” ([Why Choose Malmö University | Malmö University \(mau.se\)](#)).



About Malmö:

“Malmö was awarded student city of the year 2021/2022. An award well-earned. Malmö is located in the very south of Sweden and makes it a gateway to the rest of Europe. The city has something to offer no matter interests, lifestyle, or background. You can stroll through the parks, swim in the ocean, go to a concert, look at art, take the 40-minute train to Copenhagen. Everything within reach of a bike ride. Malmö University is based in the center of the city and is a part of the city pulse. Malmö has a great diversity with many nations represented and is a place where you can feel at home” ([Why Choose Malmö University | Malmö University \(mau.se\)](#)).

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**1.3. Gothenburg University**

About Gothenburg University:

“The University of Gothenburg is a multidisciplinary university that dates back to 1891. We consist of eight faculties and 38 departments. We also have a large number of research and centres of expertise that span across several academic disciplines. These disciplines serve as a meeting point for students, researchers and representatives from the commercial, industrial, and public sectors.

Around 49 000 students and 6 000 staff study and work here, making us one of the largest universities in Northern Europe” (<https://www.gu.se/en/about-the-university>) .



About Gothenburg:

“Gothenburg is the largest non-capital in Scandinavia. The Gothenburg region is not only home to more than one million people, but also home to leading global companies such as Volvo, Ericsson, and AstraZeneca. As the campuses of the University of Gothenburg are located all over the city, you as a student will never be far from the vibrant city life. The location of Gothenburg also provides you with easy access to stunning nature. A recreational walk in the forest, kayaking in a mirror-blank lake, or jumping into the ocean from cliffs in the archipelago will never be far away” (<https://www.gu.se/en/study-in-gothenburg>).

Overview of project PIs and contact information

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**1.4. Karlstad University**

About Karlstad University:

“Karlstad University – we challenge the known and explore the unknown. Our students and staff develop knowledge and skills for individual enrichment and to contribute to a sustainable society. Our creative academic environments are characterised by curiosity, courage and persistence. By taking a critical approach, we safeguard the scholarly and artistic foundations of our operations. Karlstad University is characterised by welcoming proximity and trust. We always promote democratic values, equality and diversity” ([Vision and strategy 2030 | Karlstad University \(kau.se\)](#)).



About Karlstad:

“Karlstad has enjoyed the reputation of being a friendly and hospitable city for a long time. With the proverbial sun and an expanding and innovative university, Karlstad now ranks as one of the best student cities in Sweden” ([Karlstad - the student city | Karlstad University \(kau.se\)](#)).

Overview of project PIs and contact information

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### 1.5. Stockholm University

About Stockholm University:

“Stockholm University is one of Sweden’s largest, with around 30,500 full-time students and 5,700 employees. We have a strong emphasis on education and research in both the human science and science, collaborating across national and international boundaries. We work toward equality, gender equality and equal treatment” ([Work at SU - Stockholm University](#)).

Welcome to Stockholm University in the capital of Sweden, characterised by openness, innovation and collaboration. Ranked among the world’s top 100 universities, Stockholm University is one of Europe’s leading centres for higher education and research in human science and science” ([Our employees are important - Stockholm University \(su.se\)](#)).



About Stockholm:

“Stockholm offers everything you expect to find in a cosmopolitan city: beautiful architecture, trendy shopping, museums, theatres, night clubs, international food and a music scene that attracts stars nationwide and globally.

On top of that you are met by stunning waterfront views almost wherever you go, as the city is built on fourteen islands. Off the coast there is an archipelago consisting of another 30,000 islands, several of which can be reached with the public transport travel card.

Our campus is situated in a Royal National City Park, just minutes away from the city centre” ([Discover Stockholm and Sweden - Stockholm University \(su.se\)](#)).

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**1.6. Uppsala University**

About Uppsala University:

“Uppsala University is the oldest university in Sweden, founded in 1477. Today we are a broad research university with a clear mission: To pursue top-quality research and education and to interact constructively with society, to in different ways contribute to a better world” ([Mission, goals and strategies - Uppsala University, Sweden \(uu.se\)](#)).



About Uppsala:

“In Uppsala, more than 40,000 students are seen, heard and make their mark everywhere. It is no wonder, since they have been part of the city since 1477. They have created traditions and continue to create these, something that made Uppsala the student city it is today” ([Study and live in Uppsala - Uppsala University, Sweden \(uu.se\)](#)).

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**1.7. Umeå University**

About Umeå University:

“Umeå University is one of Sweden’s largest institutions of higher education with over 35,000 students and 4,200 faculty and staff. We are characterised by world-leading research in several scientific fields and a multitude of educations ranked highly in international comparison. Umeå University is also the site of the pioneering discovery of the CRISPR-Cas9 genetic scissors - a revolution in genetic engineering that has been awarded the Nobel Prize in Chemistry” ( [Work with us \(umu.se\)](https://www.umu.se/en/work-with-us)).



About Umeå:

“The influx from near and far has transformed Umeå into northern Sweden’s largest urban community with an atmosphere characterised by openness partnered with just the right amount of inquisitiveness. Today’s residents of Umeå, both old and new, have an accepting attitude towards new thoughts and ideas, different behaviours, lifestyles and cultures” ( [Living in Umeå \(umu.se\)](https://www.umu.se/en/living-in-umea)).

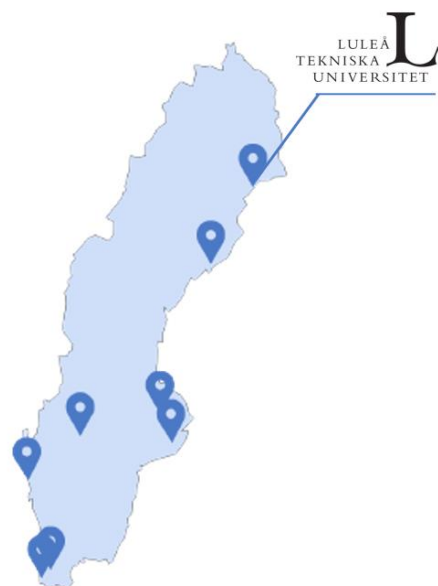
Overview of project PIs and contact information

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**1.8. Luleå University of Technology**

About Luleå University of Technology:

“Luleå University of Technology experiences rapid growth with world-leading expertise within several research domains. Our research is carried out in close collaboration with companies such as Bosch, Ericsson, Scania, LKAB, SKF as well as with leading international universities and national and regional actors. Luleå University of Technology has a total turnover of SEK 1.9 billion per year. We currently have 1, 815 employees and 19, 155 students” ( [University in brief - Luleå University of Technology \(ltu.se\)](https://www.ltu.se/en/university-in-brief)).



About Luleå:

“A centre for growth, Luleå is situated in the province of Norrbotten that spans a quarter of Sweden's surface area. Luleå is truly a place of contrast. You will be surprised by the international atmosphere while at the same time the closeness to unspoiled countryside opens up for unlimited possibilities. Luleå can offer you action-

packed adventure but here you can also enjoy tranquillity, peace and quiet. In winter the town is clothed in white but in summer it's embraced by sun and heat" ([English - Luleå kommun \(lulea.se\)](https://www.lulea.se/en)).

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## II. List of associated partners

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- VATTENFALL AB SE
- H2GS AB SE
- EUROPEAN SPALLATIO SVENSK KARNBRANSLEHANTERING AKTIEBOLAG SE
- EUROPEAN SPALLATION SOURCE ERIC SE
- UNIVERSITAET HAMBURG DE
- ASTRAZENECA AB SE
- UNIVERSITY OF LANCASTER UK
- CHALMERS TEKNISKA HOGSKOLA AB SE
- UNIVERSITEIT GENT BE
- GKN AEROSPACE SWEDEN AB SE
- ALFA LAVAL TECHNOLOGIES AB SE
- RISE RESEARCH INSTITUTES OF SWEDEN AB SE
- FORCE TECHNOLOGY DK
- OATLY AB SE
- FORSCHUNGSZENTRUM JULICH GMBH DE
- SWERIM AB SE
- ALLEIMA (AKTIEBOLAGET SANDVIK MATERIALSTECHONOLOGY Sweden)
- SKOGSSTYRELSEN SWEDEN
- IMPLEXION PHARMA AB
- NORTHERN LIGHTS ON FOOD
- TREESEARCH

## III. Abbreviations

CDP	Career Development Plan
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CSP	Central Selection Panel
DS	Doctoral Student
ExPaNDS	European Photon and Neutron Data Services
GNeuS	Global Neutron Scientists
LEC	Local Evaluation Committee
MSCA	Marie Skłodowska-Curie Actions
PAC	MAX IV Programme Advisory Committee
PC	Project Coordinator
PI	Principle Investigator
PMT	PRISMAS programme management team

#### IV. List of all projects

Project Title	PI	Affiliation
<b>Accelerator Science</b>		
Generation of ultra-short light pulses	Francesca Curbis	Lund University
<b>Clean Energy</b>		
Soft X-ray spectroscopy study of molecular semiconductors for durable organic photovoltaics.	Ellen Moons	Karlstad University
Operando X-ray spectroscopy of semiconductor nanostructure devices	Rainer Timm	Lund University
Event-averaged and time-resolved ambient-pressure XPS as a new tool to study catalysis.	Jan Knudsen	Lund University
Time-resolved APXPS for the investigation of atomic layer deposition	Joachim Schnadt	Lund University
Combining spectroscopy and diffraction for operando studies of complex oxides	Lindsay Merte	Malmö University
Resolving microsecond nanoscale fluctuations with X-ray Photon Correlation Spectroscopy at MAX IV	Foivos Perakis	Stockholm University
Bridging the gap between ultrafast and steady-state: Nanosecond optical pump and X-ray probe spectroscopy for chemical, bio-inorganic and materials sciences	Philippe Wernet	Uppsala University
Topology of Ultra Thin Metal Films on Semiconductors	Hanmin Zhang	Karlstad University
Using magnetoionics and x-ray scattering to investigate energy materials under in-operando conditions	Germán Salazar Alvarez	Uppsala University
Opening a new era in tribology: Rheology-Tribology - SWAXS (RheoTrib-SWAXS)	Nazanin Emami	Luleå University of Technology
Nanoscale domain fluctuations in functional materials from X-ray photon correlations	Martin Beye	Stockholm University
<b>Healthy people</b>		

Structure-guided design of antiviral agents targeting coronaviruses	Jens Carlsson	Uppsala University
Liquid-liquid phase separation mediated by phosphorylated intrinsically disordered proteins	Marie Skepö	Lund University
Development and applications of quantum refinement for time-resolved crystallography	Ulf Ryde	Lund University
Visualization of vulnerable plaques by complementary use of energy dispersive X-ray phase contrast tomography and conventional histology.	Martin Bech	Lund University
Tracking ATP-Dependent Protein Dynamics	Magnus Andersson	Umeå University
Radiosensitization for radiation therapy – X-ray induced fragmentation in DNA.	Carl Caleman	Uppsala University
Structure and dynamics of solid-state formulations of biologics	Vitaly Kocherbitov	Malmö University
Time resolved studies of Urocanate Reductase - a Novel Microbial Enzyme Producing Imidazole Propionate	Karin Lindkvist	Lund University
Structure-based fragment screening targeting Cancer	Pål Stenmark	Stockholm University
<b>Healthy planet</b>		
HYDROTRANS – Migration of geologically stored hydrogen in bedrock	Mikael Sjö Dahl	Luleå University of Technology
Spectroscopic and geometric characterization of high-valent dinuclear metalloprotein intermediates	Martin Högbom	Stockholm University
In situ SAXS and XANES studies to probe the structure and chemistry of nanocellulose based water treatment materials	Aji P Mathew	Stockholm University
The role of fungal communities in controlling mobilization of organic carbon (OC) and iron (Fe) from forest soils	Emma Kritzberg	Lund University
Uncovering the thermal and mechanical degradation mechanisms of coated ultrahard cutting tools for sustainable machining applications	Rachid M'Saoubi	Lund University
Food proteins from plant sources: from structure and interactions to tunable assembly	Felix Roosen-Runge	Lund University
How could oxidation state and local structure of chromium affect strategies for phosphorus recovery?	Nils Skoglund	Umeå University
Chlorine Surface Activation Mechanism on Wildfire Smoke Particles and Its Relevance to Stratospheric Ozone Depletion	Xiangrui Kong	University of Gothenburg
Closing the Loop: Chemical Speciation using XAS a Key for Safe Secondary Use of Materials	Jenny Rissler	Lund University
Aerosol particle surface characterization in-situ for enhanced atmospheric science	Axel Eriksson	Lund University
<b>Sustainable Technologies</b>		
Misfit strain detection in precipitate hardening alloys by Bragg coherent diffraction imaging	Martin Fisk	Malmö University

Elucidating time-resolved formation and assembly of lignin nanoparticles in the presence of metal ions	Mika H. Sipponen	Stockholm University
In situ X-ray spectroscopy to unravel electrochemical CO <sub>2</sub> reduction mechanism to sustainable fuels and chemicals.	Sergey Koroidov	Stockholm University
In-situ corrosion in complex alloys	Rebecka Lindblad	Uppsala University
Identifying Active Sites in Electrochemical Ammonia and hydrocarbon Synthesis via In Situ APXPS and XAS	Jiayin Yuan	Stockholm University
Multiscale dynamics of nano-cellulose materials using unique Rheo-SWAXS techniques at MAX IV	Karen Edler	Lund University
Using NanoMAX to understand Additive manufacturing of rare-earth-free permanent magnets	Martin Sahlberg	Uppsala University
Quantum properties of direct-Chemical vapor Deposited two-dimensional (2D) heterostructures	Venkata Kamalakar Mutta	Uppsala University