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| **GREENPEG Summer School** A Theoretical and Practical Introduction into Advanced Non-destructive Exploration Techniques |
| **Application Package**  |  |
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| * **Application form**
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| * **Terms and conditions**
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| * **International travel risk assessment**
* **Fieldwork risk assessment**
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**The completed application form should be submitted to the national contact point (if available – see page 4) and the general contact point (mengchun.lee@gkz-ev.de)at the same time.**



1. **Practical information**

**Aim**

The aim of the GREENPEG Summer School is to give strong practical insight into exploration for pegmatites, one of the most popular exploration targets in Europe now and in years to come.

It will help students to familiarise themselves with the latest ground and airborne exploration technologies that meet the highest social and technical standards. Students will understand the economic aspects of mine development with a focus on exploration and investors´ approach in financing mining projects.

**GREENPEG project**

Many of the raw materials for green energy production can be sourced from lithium-caesium-tantalum (LCT) and niobium-yttrium-fluorine (NYF) pegmatites. [GREENPEG](https://www.greenpeg.eu/) is a European Union funded project that aims to reduce exploration costs and impact on the environment by developing two innovative and complementary toolsets, including:

* three new instrumental techniques and devices (piezoelectric sensor, helicopter-complementary nose stinger magnetometer, drone-borne hyperspectral imaging system)
* two new datasets and workflows for prospect scale (<50 square km) and district scale (50-500 square km) exploration.

Validation will be ensured from industry-led trials in Norway, Austria, Portugal, Ireland, and Spain testing different landscape, vegetation and climate environments, and geological settings.

**Programme overview**

The programme language is English. In general, students will have indoor lectures in the mornings and practical sessions in the field during the afternoon.

The programme covers topics including geochemical mapping of pegmatite fields, geophysical exploration methods, drone-borne hyper-spectral data acquisition, remote sensing exploration, satellite data interpretation, life cycle assessment for exploration and mining, and critical raw materials in the circular economy. Speakers from industry are invited to talk about global exploration and markets with a focus on sourcing critical raw materials from pegmatites. Furthermore, a visit to Quartz Corp, a local company mining and processing ultrapure pegmatite quartz, will be arranged.

Besides the lectures and practical sessions, an open day with the local community, a social outdoor excursion day and a barbecue evening will take place during the weekend.

**Lecturers**

* Geological Survey of Norway (NGU)
* Universidad del País Vasco (UPV)
* University College Dublin (UCD)
* University of Exeter (UNEXE)
* University of Oslo (UIO)
* University of Porto (UPORTO)

**Industrial partnerships**

* Geokompetenzzentrum Freiberg e.V. (GKZ)
* IFU GmbH Privates Institut für Umweltanalysen (IFU)
* Terratec Geophysical Services GmbH & Co KG (TERRA)

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| GREENPEG Summer School  |
| When | 19-30 June, 2023 |
| Location | Tysfjord, Norway |
| Language  | English  |
| Relevant research fields  | Battery high-tech metal exploration, green-tech raw materials, geophysics, geochemistry, geology |
| Certificate of participation  | Awarded to participants on completion |
| Participation fee | There is **no participation fee** for attending the GREENPEG Summer School. The accommodation and travel costs are also covered by GREENPEG. For more details, please see the Terms and Conditions. |

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| Condition of participation |
| Target group | Masters and PhD students |
| Field of studies  | Geosciences including geochemistry, geophysics, ore and economic geology as well as felsic magmatic systems |
| Eligible countries | Students enrolled in universities in the EU, UK, Norway and Switzerland with permission to travel to Norway |

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| Application and admission  |  |
| Deadline for applications  | 31st of January 2023 |
| Announcement of admission | 31st of March 2023 |
| Target number of students  | 12 |

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| General and national contact points  |
| General  | GKZ  | Meng-Chun Lee | mengchun.lee@gkz-ev.de |
| Germany  | GKZ | Wolfgang Reimer | wolfgang.reimer@gkz-ev.de |
| Ireland | UCD | Julian Menuge | j.f.menuge@ucd.ie |
| Norway | UIO & NGU | Axel Müller  | a.b.muller@nhm.uio.no |
| Portugal | UPORTO | Alexandre Lima | allima@fc.up.pt |
| Spain | UPV | Encar Roda-Robles | encar.roda@ehu.es |
| UK | UNEXE | Kate Smith | k.smith@exeter.ac.uk |

1. **Application form**

Please answer the following questions in **English**.

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| Personal information  |  |
| Name  |   |
| Gender |  |
| Date of birth  |  |
| Country of Citizenship |  |
| Phone number (including country code) |  |
| E-mail address |  |
| Postal address  |  |

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| Academic information |
| University name |  |
| Degree of current study and semester year  |  |
| Major or area of study |  |
| Courses you have taken which are relevant to the summer school programme (state topic and level of each course) |  |

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| Additional information - Optional |
| Dietary restrictions  |  |
| Allergies and special medication needs  |  |
| Emergency contact  |
| Name |  |
| Phone number  |  |
| E-mail |  |

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| Other documents required  |
| Please attach your official academic record (transcript) in both English and native language to this application form |

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| Supporting information  |
| Career – briefly describe how the programme will support your future career (max. 1500 characters) |
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| Other motivation – briefly describe your other motivation(s) to apply to the GREENPEG Summer School 2023 (max. 1500 characters) |
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1. **Terms and conditions for GREENPEG Summer School 2023**

***3.1 Terms and conditions for travel, insurance and reimbursement of expenditures***

The participants of the GREENPEG Summer School 2023 agree to travel at their own risk in terms of e.g. risks related to the ongoing pandemic. The applicable regulations as well as hygiene and distance rules of the country visited must be complied with for the duration of the trip. The same applies to the respective house rules of the visited facilities.

The participants are responsible for their own travel insurance that covers health (European Health Insurance card or the Global Health Card for the UK participants), travel cancellation, theft of belongings and accidental damage, from the beginning to end of the GREENPEG Summer School 2023, including repatriation.

Travel to and from the meeting point of the GREENPEG Summer School 2023, Bodø airport in Norway, must be arranged by each individual participant.  While participants must pay their travel costs in advance, the expenditure will be reimbursed by GKZ Freiberg e.V. in Germany under the following conditions:

* Before purchasing any tickets and/or booking any hotels (which should be economy class or best value), participants must contact the respective national contact point or the general contact point and acquire their approval.
* Travel tickets must be purchased at least one month prior to departure.
* The costs will be reimbursed by GKZ upon the presentation of the receipts within two weeks after the end of the GREENPEG Summer School 2023 in accordance with the billing rules.

***3.2 Terms and conditions for accommodation and food***

The cost of the accommodation of the participants is paid by GREENPEG during their stay at the GREENPEG Summer School. The accommodation is shared rooms (likely four people in one room) with breakfast included. You may find more information here: [TRANØY FYR](https://tranoyfyr.no/hjem). Single-sex occupancy will be provided where possible, depending on availability.

Breakfast, lunch and the official group dinner are covered by GREENPEG. On the days when there is no official group dinner scheduled, there will be a bus taking the participants to supermarkets for grocery shopping. There is a communal kitchen available in the accommodation premises.

***3.3 Data protection – personal data***

The following statements are in compliance with the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016. Moreover, the GREENPEG consortium is bound to the Horizon 2020 Framework Programme of the European Union Grant Agreement 869274 to ensure compliance of its Article 39.2 - Processing of personal data by the beneficiaries.

The provision of personal data is a requirement to participate in the GREENPEG Summer School 2023.

Use of your personal data

The personal data of the applicants is only collected and processed by the GREENPEG project consortium for the purpose of preparing and implementing the GREENPEG Summer School 2023. For example, personal data is collected and processed for the evaluation of applications, for communication with regard to the GREENPEG Summer School 2023 and for the reimbursement of expenditure after the GREENPEG Summer School 2023.

Security, storage and data retention

The personal data is stored in the GREENPEG consortium’s computers, in the servers of our cloud provider and/or in hard copy form. Personal data will not be transferred outside of the EEA or international organisation. Personal data will not be further processed for a purpose other than that for which the personal data was collected.

We use physical and technological security measures to protect your information from access by unauthorised persons and against unlawful processing and damage. Unfortunately, the transmission of information via the internet is not completely secure and therefore we cannot guarantee the security of any data disclosed online.

Your information will be stored until the end of the GREENPEG project.

Your rights

Applicants have the right to request from the GREENPEG consortium access to and rectification or erasure of personal data or restriction of processing concerning the data.

The applicants have the right to withdraw consent at any time, without affecting the lawfulness of processing based on consent before its withdrawal and have the right to lodge a complaint with a supervisory authority.

There is no legal entitlement to participate in the GREENPEG Summer School 2023. The legal process is excluded. If an applicant is unable to participate during the application period after submitting their application, the GREENPEG consortium (i.e., national contact point if applicable and the general contact point) must be informed immediately in writing.

***3.4 Data protection – photos, videos (including voices) and interviews***

Photos, videos (including voices) and interviews of participants will be taken by a photographer invited by GREENPEG and GKZ, one of the GREENPEG project partners during the GREENPEG Summer School 2023. The photos, videos (including voices) and interviews will be used publicly in the GREENPEG communication and promotional materials for the purpose of illustrating the achievements of the GREENPEG project and increasing its impact. The communication and promotional materials include for instance the GREENPEG website, GREENPEG presentations, GREENPEG Newsletters, GREENPEG brochures and the GREENBOOK. The photos, videos (including voices) and interviews will not be used for a purpose other than communicating and promoting the GREENPEG project.

The participants of the GREENPEG Summer School 2023 waive any right to inspect or approve the finished photos and video recording. The participants agree that all such photos, videos (including voices) and any reproduction thereof shall remain the property of the GREENPEG project and that the GREENPEG project may use it as it sees fit for the above listed purposes.

The participants understand that this consent is perpetual, that they may not revoke it, and that it is binding.

1. **International travel risk assessment**

The purpose of this risk assessment is to assess the risks to participants posed by Covid-19 and the identification of risk control measures that may be taken to reduce said risk.

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| Travel specific information |
| Details of local Covid-19 requirements /restrictions in place at the destination(Include testing and isolation requirements) | At the time of writing, Covid-19 travel restrictions have been lifted in Norway. Providing proof of vaccination, recovery from Covid-19 or negative test results **is not required**. Nor are they required to access public spaces. (25-11-2022 from [Re-open EU](https://reopen.europa.eu/en)) |
| Supports in place to facilitate any period of quarantine or self-isolation in country of travel  | Participants with Covid-19 symptoms can stay in Covid-19 isolation rooms at the accommodation [TRANØY FYR](https://tranoyfyr.no/hjem). |

1. **Fieldwork risk assessment**

The field area around Tysfjord in Nordland, Arctic Norway (approximately 68°N, 16°E) is partially covered in pine forest with small areas of agricultural land. Elsewhere it is sparsely vegetated with generally thin soil, so that bedrock is widely exposed. Field areas to be visited are on land held by working open pit and underground mines and the rest on nearby surrounding land. The lecturers of the GREENPEG Summer School 2023 will describe in advance the places to be visited, the most significant hazards and how to behave in an emergency, as will mine site operators prior to the practical sessions.

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| Hazard identification and risk assessment |
| Hazard | **Risk** | **Control** |
| Physical hazards (e.g. extreme weather; mountains and cliffs, quarries, marshes; fresh or seawater) | 1) Extreme weather2) Steep and rough terrain3) Rock falls and unstable piles of rock | 1) Heavy rain and/or cold (down to 0 °C) may occur, with risk of hypothermia; possible lightning strike2) Trip or stumble, with resulting injuries possible, especially to head and ankle3) In quarries/mines, rocks may fall on people from quarried faces; piles of rock may move if disturbed, potentially causing injury | 1) Waterproof warm clothing to be brought and worn as appropriate; move to vehicle if lightning near or if hypothermia symptoms manifest; will never be far from a vehicle, where spare dry clothes will be kept2) Maintain vigilance; wear hard hat/helmet at all times directed by the lecturers of practical sessions3) Stay away from quarried faces; do not disturb piles of large rocks4) The vehicles for the GREENPEG Summer School 2023 are to be driven carefully and with regard to weather conditions |
| Biological hazards (e.g. poisonous plants; aggressive animals; insects, soil or water micro-organisms) | Micro-organisms in soil. [Lyme disease](https://www.iamat.org/country/norway/risk/lyme-disease) are known in Norway, but not this far north. There are no dangerous mammals and no significant biting insects other than mosquitos and tiny flies. | Soil micro-organisms will be present, with exposure during soil sampling either through ingestion or cuts | 1) No sampling on agricultural land2) Use of sanitiser to clean hands after soil sampling or other situations where hands are soiled 3) Alcohol wipes to clean any wounds, followed by bandaging of wound using small first aid kits which will be provided by the GREENPEG project4) Bring own anti-mosquito spray/lotions |
| Chemical hazards(e.g. pesticides; dusts; contaminated soils; chemicals brought into site) | Dust from spoil heaps (waste) left after mining activities | The waste material is of low toxicity but in places may have slightly elevated radioactivity compared to normal background due to the nature of some of the mined material | Avoid dusty areas and if dust is unexpectedly thrown into the air, move away; wash dust from eyes and mouth with clean water |
| Man-made hazards (e.g. electrical equipment; vehicles, insecure buildings; slurry pits; power and pipelines) | 1) Mining and quarrying equipment2) Road traffic | 1) Physical injury from collision with moving vehicle or unexpected movement of stationary equipment2) Collision while working on road side | 1) Maintain vigilance; keep clear of all machinery, moving or not, unless approved by mine staff2) Maintain vigilance; wear reflective jacket provided by the GREENPEG project if working on road side; be aware the traffic drives on the right |
| Personal safety(e.g. lone working, violence and aggression) | Violence or aggression | Assault | Do not argue with mine staff or other landowners; if any disagreements arise, consult the lecturers of the GREENPEG Summer School 2023 or the GREENPEG team members on site. No lone working; participants are supervised by the GREENPEG team members. |
| Environmental impact(e.g. rubbish; pollution, extreme heat/ cold) | Rubbish in quarries | Injury from fly-tipped objects | Stay away from rubbish in quarries |
| Other hazards(e.g. manual handling, fatigue, etc.) | Manual handling and fatigue | Back strain and/or fatigue caused by repetitive bending  | Take breaks; do stretching exercises before and after the practical sessions |
| Detail fieldwork emergency response plan, including emergency response contact numbersFieldwork will all be within 1 km of a vehicle which will, if appropriate, be used in emergency to transport an injured party. If it is best not to move the individual, then the relevant emergency services will be called, if necessary by driving to a building with fixed phone line or to a site with mobile phone coverage (main road surrounding Tysfjord). Phone 113 for ambulance, including air ambulance if required.The nearest emergency hospital (open 24 hours) is University Hospital of North Norway, Narvik, which is about 60 km away by air ambulance. Phone: +47 76 96 80 00; web site: https://unn.no |

**Consent to the Terms and Conditions for GREENPEG Summer School 2023 and acknowledgement of the risks arising from participation in the GREENPEG Summer School 2023**

Through signing this application form, you consent to the Terms and Conditions for the GREENPEG Summer School 2023 and acknowledge the risks of participation.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_