VolkswagenStiftung

Collaborative Projects

Circularity with recycled and biogenic ressources

Profile area: Societal Transformation

Next Deadline: 01.03.2024

(Primary) raw materials are becoming increasingly scarce. Their extraction and processing place an excessive burden on the earth through greenhouse gas emissions, biodiversity loss and water consumption. A transformation toward a signifivantly reduced raw material footprint is the societal consensus. This is the goal of circularity. Recycled and biogenic materials, prolonged product lifespans, refurbishing and repurposing are key to this. Funding is provided for original and practically relevant projects on closing raw material-product loops.

Area of research: Natural Sciences and Engineering, if required Social Sciences

Type of funding: Research project

Target group: Collaboration of 2 to 3 researchers with contact to practicioners

up to 1.3 million euros

4 years

interdisciplinary, national or international collaboration, lead in Germany

1 Objectives

The sustainable and resource-efficient manufacturing, the prolonged lifespan of a product and its parts, and material recycling at the end-of-life are what the funding initiative on ‘Circularity with recycled and biogenic raw materials’ is all about. The research objective is to demonstrate how to close specific raw material-product loops in practice. Preference will be given to research on raw material-product-cycles without established sustainable strategies for reuse, repurpose, remanufacturing and recycling.

The following research fields are in focus:

- Bio-inspired material design for sustainable raw materials
- Microbial and molecular conversion of recyclates and bio-based raw materials
- Valorization of waste streams featuring complex composition (composites, combination of materials) or high environmental impact
- Functional product design ideally suited for reuse and recycling or for the use of recyclates

This includes research into new efficient processes and methods, for example:

- Intelligent separation technologies for the recovery of high-purity substances
- Highly innovative recycling technologies and (bio-)process engineering
- Analytics and characterization methods for biogenic resources and recyclates

It is the task of interested applicants to identify a resource-product system of relevance, to substantiate the choice and to pinpoint the knowledge gap. In a systems approach, the solution should focus on a weak link in the cycle, taking into account the effects on neighboring elements and on the cycle as a whole. In a proposal the targeted improvement should be estimated quantitatively (giving numbers). Further, the potential for up-scaling and transfer must be addressed. The research question posed and the methodology have to be justified with respect to the state of the art.

The following criteria apply to the research project:

- Systems approach (holistic)
- Problem analysis from a product perspective
- High impact solution (in terms of material quantity, generalizability, scaling and/or critical supply);
- Transferability into practice
- Impact in all dimensions, i.e. technological, societal, economic, environmental
- Assessment of resilience and sustainability.

Scientific risk in a positive sense ('high risk, high gain') and creative approaches (‘out of the box’) are very welcome. Machine learning and digitization are included as methods, but not mandatory.

2 Scope of Funding

2.1 Project Design and Eligibility

- Interdisciplinary collaboration of 2 to 3 researchers with a joint topic
- Eligible: Professors, group leaders, postdoctoral scientists at a scientific institution, e.g. university, university of applied sciences or extramural research institute
- with proven expertise in sustainable raw materials and product lifecycles
- 1st applicant (lead) from Natural Sciences or Engineering and at a scientific institution in Germany
- 2nd, possibly 3rd applicant from any suitable academic field and at a scientific institution in Germany or worldwide, incl. Global South;
- active contacts to practitioners outside the academic research community.

Applications with more than three applicants as well as single investigator projects cannot be considered.

2.2 Budget and Duration

- Total budget 1.3 million euros max. (without counting overheads)
- Duration of project: 4 years
- Separate budget for each applicant
- International funding posssible, substantial share of the total budget for work in Germany
- Funding of scientific personnel, technical personnel, travel expenses, other recurring costs (consumables etc.), equipment (experimental set-up, prototype etc.), publication costs (open access) and, if the condition is met, overhead costs.

All cost items must be justified on a project basis and in the light of existing equipment.

2.3 Overheads

Universities and universities for applied sciences can apply for 10 % overheads. Overhead costs must be requested in the budget form. For more information on overheads, see "Information on lump sum for overheads", which is provided in our download section.

Open Science

The Foundation is committed to Open Science (Open Science Policy). It is therefore expected that project results will be published open access and that data collected will be made available for scientific use via recognized repositories (see NFDIs, re3data, and RIsources). If data collection is intended, the essential information is to be presented in a data management plan (basic data management plan of the foundation or a more detailed data management plan of the respective discipline). In case no data is generated in the project, this needs to be explicitly stated in the application.

Note: For the later preparation of the project's research data, in the case of a grant, the offer 'Data Reuse - Additional funding for the preparation of research data' is available.

Science Dissemination and Communication

In order to communicate findings to non-scientific target groups – and in return to constructively address their questions, concerns and ideas, 'additional funding for science communication' can be applied for in case of funding.

General Notes

The Foundation cannot be held responsible for any obligations entered into prior to the receipt of grant approval. The Foundation can only award funds to scientific institutions. Thus, funds cannot be allocated to practitioners involved (spin-offs, companies, municipal enterprises, associations, civil society etc.).

Applications that have been or are intended to be submitted in this or a similar form to another funding organization will not be processed by the Foundation. Applications that do not meet the formal requirements will not be submitted for review.

3 Application and Selection Procedure

3.1 Time Schedule

3.2 Procedure

Eligible researchers can submit full proposals (single-stage procedure). The processing of an application takes 6 to 8 months from the deadline to the information on the outcome. The proposals are formally reviewed in-house and then forwarded to a peer review committee. The review committee is international and drawn from the Natural Sciences and Engineering.

Each proposal is pre-evaluated by two experts on the committee. The committee meets to discuss and compare all applications and to make funding recommendations. In case of many high-quality proposals that the committee cannot further differentiate based on scientific quality, a decision by lot is a possible option. Funding decisions are made by the Board of Trustees of the Volkswagen Foundation.

Review criteria:

- Relevance of the research question for circularity
- Scientific originality and technological innovation
- Potential for practice transfer
- Coherence of project design and methodology
- Scientific qualification and interdisciplinary team composition.

4 Application Checklist

The full proposal is written in English and can be submitted via the Foundation's online application system. Templates are provided for the project description, the CVs and the data management plan. Regarding the enclosures (details see 4.2.1.) – also written in English – there are no format or length requirements.

4.1 Electronic Application – Instructions

Please read the information about the electronic application system on the website of the Volkswagen Foundation prior to submitting your application. Information can be found in the document "Electronic Application System – Instructions and Tips". It is important that applicants register all involved parties early on in the process. Without a user profile it is not possible to invite co-applicants or to submit an application.

A registration and submission of applications by graduate students or other non-eligible persons leads to avoidable queries and delays in application processing. Therefore, as an eligible applicant please always register under your own e-mail address.

All documents to be uploaded must be in pdf format (max. 10 MB). If you have technical questions about using the electronic application system, please contact support@volkswagenstiftung.de.

4.2 Application documents

4.2.1 Project description (template file) and enclosures

- Project description with literature references (8 to 12 pages, Arial 11 pt, according to the full proposal template)
- Lay Summary – in German and English (approx. 200 words each)
- Enclosure: Table of practitioners or stakeholders with specific interest and planned involvement (in keywords)
- Basic Data management plan according to the template or a statement that research data or code will be generated in the project
- List with brief delineation from ongoing or recently finished externally funded projects by all applicants or a statement that an applicant currently neither leads an externally funded project nor holds an externally funded fellowship

4.2.2 Budget Plan with Justification of Costs

The cost plan is entered online in the cost form provided. When a co-applicant is invited via the application system, a separate cost form is automatically generated. All cost items must be broken down under the following cost categories:

- scientific personell
- other personell
- travel costs
- other recurring costs
- equipment costs
- publication costs
- overheads according to 2.3.

When calculating the budget please refer to the ‘Recommendations for sustanaible traveling’ and the ‘Average personnel rates’ in Germany (available in our download section). For institutes located outside Germany the local salary level applies. Please always indicate the pay scale level or other basis of calculation. A teaching buyout or teaching substitute (project-related sabbatical) runs under scientific personnel. Travel expenses are also feasible for laboratory rotations or research stays with a practice partner. Please do not forget the applicable VAT on equipment.

4.2.3 Curriculum Vitae of every applicant

- Tabular-narrative curriculum vitae (each 4 pages max., Arial 11 pt, according to the CV template)

4.2.4 Further application documents

The following documents are only required under the given circumstances:

- Only for equipment item(s) above 10,000 euros incl. VAT: one quotation each;
- Only if applying for one's own position as an applicant: ‚Institutional declaration' on feasibility, administration of grant, hiring by the institute (free text, no template) .

5 Contact

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6 More Information, Weblinks

Website on the Circularity call (VolkswagenStiftung)

General FAQs for applicants

Useful Information and downloads

Application System

Electronic application made easy - instructions and tips