

BAM Junior Research Groups: 2026 Call for Proposals on the topic of Autonomous Metallurgy

Contents

1. Funding objective	1
2. Target group and application requirements ('eligibility criteria')	2
3. Thematic framework: Sustainable additivated polymeric materials	2
4. Composition of the Junior Research Group	3
5. Role of the junior research group leader	4
6. Anchoring of the Junior Research Group in the Division 5.1 Microstructure Design and Degradation and integration into BAM	4
7. Application and evaluation process	5
7.1 General procedure, selection committee and timetable	5
7.2 Overview of the application process	5
7.3 Documents to be submitted	6
7.4 Evaluation criteria	6

The Federal Institute of Materials Research and Testing (BAM) is a scientific-technical senior federal agency based in Berlin. As a departmental research institution of the Federal Ministry for Economic Affairs and Energy, we research, test and advise on the protection of people, the environment and material goods. Our activities in the fields of materials science, materials engineering and chemistry focus on the technical safety of products and processes.

1. Funding objective

In order to sustainably fulfil and secure its role as a national and international centre of excellence for "Safety in Technology and Chemistry", it is essential for BAM to attract outstanding junior researchers and offer them attractive long-term conditions.

With the 'BAM Junior Research Groups'-programme, BAM offers in its focus areas excellent junior researchers from all over the world the opportunity to set up their own independent junior research group at BAM and to establish themselves in their community. These outstanding junior researchers are offered attractive conditions at BAM in the form of competitive funding and long-term career perspectives, including permanent employment.

BAM Junior Research Groups work on key safety-relevant issues within BAM's focus areas with the aim of broadening BAM's existing expertise through new competencies in a sustainable and complementary manner.

BAM Junior Research Groups contribute to increasing BAM's visibility, strengthening its interdisciplinary approach and further expanding its internationalization and global networks.

2. Target group and application requirements ('eligibility criteria')

The target group for BAM Junior Research Groups are postdocs and junior researchers who have completed their doctorates two to five years ago and have demonstrated outstanding achievements in their field of research.

Researchers who meet the following criteria are eligible to apply:

- **Doctorate received in the last two to five years (see * for reasons for extension).** The cut-off date is the deadline for submission of the short proposals (31.05.2026); the date of the doctoral examination is considered as the date on which the doctorate was received.

* For researchers providing childcare within the eligibility period, the eligibility period will be extended by one year per child. Childcare periods lasting more than one year will be considered provided appropriate documentation is given. The maximum extension of the eligibility period due to childcare is limited to six years.

- **International research experience.** This is usually demonstrated by a continuous research stay abroad of at least one year.
- Candidates already employed by BAM are eligible to apply but must meet the two above-mentioned criteria.

In addition, candidates are expected to have the following qualifications:

- Proven outstanding publication record in the relevant research area (process metallurgy, physical and/or mechanical metallurgy)
- At least a very good doctorate is desirable, provided that a doctoral grade was awarded. Alternatively, the list of publications from the doctoral period will be used as a basis for assessment.
- Ideally, experience in acquiring and managing R&D projects and corresponding scientific project management
- Experience in supervising junior researchers

3. Thematic framework: Autonomous Metallurgy

A thematic framework is determined in advance of each call for proposals to ensure that the junior research groups are focused on topics and objectives that are of strategic relevance to BAM. Each proposal for a BAM Junior Research Group must address key scientific and technical issues in this theme. The following theme has been selected for the 2026 call for proposals:

Autonomous Metallurgy:

In the past decade, experimental materials science has gone through two disruptive waves of topical development, one being high-throughput materials synthesis and one being the paradigm shift towards multi-principle-element alloys. The former has accelerated materials discovery via the production of a multi-element phase space in a single experiment, whereas the latter has allowed us to get a glimpse of the excessively large uncharted number of potentially useful alloys. The realization of an excessively large uncharted materials space and its multi-dimensional parameter space demands for two central competencies to transition from knowledge about the potential to making use of the potential for societal needs: firstly, a computational expertise is needed to screen large compositional ranges to predict where meaningful materials processing can begin. BAM's strategic development with the creation of multi-scale computational modelling and data-driven materials discovery precisely meets this need. Secondly, automated basic materials characterization and sample preparation (metallography) are underway and increasingly offered on commercial testing platforms. In between sits the here proposed autonomous metallurgy, with the potential of closing a fundamental gap in our metals research value chain at BAM with a clear focus on bulk metals with realistic microstructures. This strategic initiative will enable data-driven and application-specific alloy modifications or discovery, generate metallurgical process, property, and microstructural data out of one and the same system, which eventually will enable data-based and machine-guided alloy discovery.

The topic of autonomous metallurgy is of long-term strategic interest to BAM. It addresses key challenges in the field of metallic structural materials, whose composition, process history, and associated microstructural formation determine their safe use. This topic also addresses sustainability goals and raw material sovereignty. This will make further important contributions to BAM's strategic goals and develop innovative solutions for a safe and sustainable future. A fully integrated value chain from data-driven prediction to experimental processing and subsequent characterization is a must in today's competitive research landscape. With its explicit focus on the metallurgy of bulk systems, the proposed junior research group will also fill a gap in materials development and discovery, which has so far been based on thin-film libraries that do not represent realistic and processable bulk microstructures. The latter is a necessity for any application and a meaningful industrial commitment. We anticipate that a successful autonomous metallurgy group will be a central link between several divisions at BAM to create unique, competitive expertise in metallic materials.

4. Composition of the Junior Research Group

BAM Junior Research Groups consist of a tenured position for the group leader and temporary funding of a junior research group for five years.

The **tenured group leader position** is remunerated in line with the collective agreement for the German public sector (TVöD) E14/A 13 German Civil Service Remuneration Act (BBesO). The position can initially be filled within the framework of an employment relationship with corresponding value. If the personal requirements are met, a later appointment as a civil servant according to pay grade A 13 BBesO is possible. A promotion to pay grade A 14 BBesO can occur at a later date.

Each Junior Research Group receives – in addition to the group leader position – **funding** for five years covering:

- 2 doctoral positions for 3 years each and 1 postdoc position for 2 years

- Student assistants (Hiwis) in the amount of €75,000 (€15,000 per year)
- Consumables and travel funds in the amount of €715,000 (€55,000 per position and year)
- Investment funds (equipment, etc.) of up to €1,000,000

The distribution of consumables and travel funds as well as the planned investments must be outlined and justified in the full proposal. Flexibility in the use of funds is possible to some extent.

After an evaluation of the Junior Research Group, which will take place after three years, further funds may be provided.

It is expected that necessary funds will also be raised through third-party funding. Third-party funding and scientific productivity will be used as a basis for assessing internal funding increases.

Additional collaborations with industrial companies, universities and/or non-university research institutions are expressly desired. The full proposal should describe the specific aspects where a collaboration is planned and the nature of the collaboration.

5. Role of the junior research group leader

The role of the junior research group leader includes, among other things, the following tasks:

- Establishing and leading the Junior Research Group
- Managing and motivating the group members
- Designing and conducting application-oriented, innovative fundamental research in line with the approved project description
- Dissemination of scientific and/or developmental results
- Providing impetus for and own acquisition of third-party funded research projects

In addition, the head of the Junior Research Group is expected to actively participate and network both within BAM and within the national and international community:

- Active contribution to the further development of BAM's focus areas
- Positioning of BAM as a federal research institution through active participation in national and international scientific networks, advisory boards and standardization bodies
- Expansion of existing and initiation of new cooperation with national and international partner institutions

Leading the junior research group also offers attractive career perspectives at BAM. Successful Junior Research Group leaders will be excellently positioned to apply for division head positions within BAM. A university affiliation will be sought in cooperation with the department head.

6. Anchoring of the Junior Research Group in the Division 5.1 Microstructure Design and Degradation and integration into BAM

The Junior Research Group group will be organizationally anchored in BAM's Division 5.1 Microstructure Design and Degradation. An overview to the division can be found [here](#).

The Division 5.1 commits to, among other things, support the Junior Research Group by providing the following:

1. Organisational support (hiring of team members; handling of project funds)
2. Appropriate office/lab facilities including equipment
3. Access to other infrastructure and support staff (especially technical assistants and secretaries)
4. Possibly other project-specific aspects, such as specific IT infrastructure
5. Further organizational and scientific support is provided by the department head.

To guarantee the **independence of the group**, the group leader's responsibility for personnel and budget matters will be ensured. The junior research group is expected to work with a high degree of independence.

Given the expected interdisciplinary nature of the project, it is expected that **other BAM organisational units will also be involved in the project** in addition to the host organisational unit (access to infrastructure, method or task-specific cooperation, etc.). In particular, divisions 5.2, 5.5, 6.3, and 6.4 should be mentioned here. The contribution of these organizational units must be described in the full proposal. An overview of BAM's departments and divisions can be found [here](#).

In addition, the Junior Research Group is expected to be actively involved in [the focus areas and fields of activity of BAM](#), in particular in the field of activity [Materials Design](#) within the focus area [Material](#).

7. Application and evaluation process

7.1 General procedure, selection committee and timetable

BAM Junior Research Groups are selected in a **two-stage application process**. In the first application stage, candidates submit short proposals. Candidates nominated after this pre-selection process are invited to submit a full proposal in the second application stage.

A **selection committee** set up specifically for this program decides on the full proposals based on external reviews and the presentations of the candidates to the committee. The members of the selection committee are appointed by the President of BAM.

The following **timetable** has been established for the **2026 call for proposals**:

Deadline for submission of short proposals	31 May 2026
Decision on inviting full proposals	July 2026
Deadline for submission of full proposals	30 September 2026
Selection meeting including project presentations and final decision	November 2026
Start of the Junior Research Group	No later than 12 months after funding approval has been granted

7.2 Overview of the application process

First application stage (short proposal):

1. Candidates apply by the specified application deadline with a CV, list of publications, letter of motivation and an outline of the planned project.

2. Short proposals received via the application portal by the deadline are formally checked by BAM's PST./MP. section and forwarded to the selection committee.
3. The selection committee evaluates the submitted applications and decides to nominate candidates for the second application stage.

Second application stage (full proposal):

1. Candidates invited to the second application stage prepare a full proposal. Partner universities and/or industrial companies should be involved in the preparation of the proposal at an early stage.
2. All full proposals received by the deadline are checked for completeness by the PST./MP. section and are sent for review to external experts and members of the selection committee.
3. All candidates present their projects to the selection committee. The presentations are given in person at BAM; in exceptional cases, presentation via video conference is possible.
4. Based on the reviews and the personal presentations, the selection committee draws up a ranking list.
5. The ranking list proposed by the selection committee is confirmed by the President of BAM and the candidates are informed of the outcome.
6. The selected junior research group leader must take up employment at BAM no later than twelve months after approval. Otherwise, the funding is forfeited.

7.3 Documents to be submitted

In the **first application stage**, the following documents must be submitted in English: CV (incl. certificates), list of publications, letter of motivation (max. 1 page) and short project outline (max. 3 pages). Templates for the letter of motivation and project outline can be downloaded [here](#).

In the **second application stage**, the following documents are required in English:

1. Detailed project description (max. 10 pages)
2. CV, letter of motivation and two letters of recommendation

Candidates invited to submit a full proposal will be provided with templates for preparing these documents, including a detailed structure of the project description.

7.4 Evaluation criteria

The selection committee will select the candidates based on the principle of merit.

The evaluation criteria in the **first application stage** are the scientific excellence of the candidates, the scientific and technical originality of the submitted project, and its suitability with BAM and the call topic.

In the **second application stage**, all submitted full proposals are evaluated by the selected external expert reviewers and members of the selection committee based on the basis of the following **evaluation criteria**: excellence and originality of the scientific-technical project, methodological quality of the work plan, contribution to BAM's objectives and structural impact.

Based on the reviews and the candidates' presentation to the selection committee, the selection committee decides on the final ranking of the proposals as per the three stated criteria.