Center for the Transformation of Chemistry

Information for Applicants for the Talent Factory

The CTC

The Center for the Transformation of Chemistry (CTC), a new national research hub in Germany supported by €1.2 billion in funding (until 2038), is dedicated to redefining the role of chemistry in tackling global challenges. The CTC brings together researchers from chemistry, physics, engineering, data science, and the social sciences to develop sustainable materials, processes, and technologies that support a circular economy. Combining basic research, applied research, and technology transfer projects, united by the overarching vision of "moonshots in chemistry" and grounded in interdisciplinary collaboration and the transformation of the chemical industry, underpins the CTC's mission.

The CTC is structured around collaborative, mission-driven research groups and state-of-the-art facilities, fostering open science, innovation, and industry partnerships. Its core mission is not only to advance cutting-edge chemistry but also to train the next generation of scientists and entrepreneurs who will drive the transformation of chemistry for a sustainable society. Researchers at the CTC benefit from access to advanced research infrastructure and close collaboration with the CTC Science Team (>20 members), who provide support and coordinate key operational activities to ensure efficient progress of research programs. The CTC currently operates from the CityLab Leipzig (CLL), which offers office space, as well as equipped analytical and experimental facilities designed to accelerate discovery. Permanent locations in Delitzsch and Merseburg are planned and long-term campus and research infrastructure is being developed.

The Talent Factory

Concept of the Talent Factory

The Talent Factory serves as an integral component of the CTC's research and transfer strategy, aligning with the overarching mission to foster an ecosystem for innovation and scientific excellence in chemical research and enabling technologies. Ultimately, comprised of up to 40 independent junior research groups, the Talent Factory operates as a dynamic hub for nurturing novel and ambitious ideas and promoting creative exploration within the thematic areas of the CTC (Automation & Standardization, Renewable

Feedstocks, Recycling, Data-driven Chemistry, and Societal, Environmental, and Economic Metrics). The aim, therefore, is not to define in advance exactly how this transformation will happen, but to remain open to the scientific opportunities that can emerge along the way. While the five thematic areas provide strategic direction, the CTC's research is underpinned by three broader scientific domains — Technology, Data, and Chemistry — providing an overarching framework for interdisciplinary research and allowing new scientific opportunities to emerge beyond established thematic boundaries. Embodying principles of openness and inclusivity, the Talent Factory acquires talent through both open and thematic calls, inviting scientists to embark on transformative research endeavors as an independent researcher. Group Leaders within the Talent Factory benefit from a research stay of up to seven years (four years guaranteed, Phase I, with three additional years, Phase II, after a positive evaluation of the first phase), serving as a launchpad for the long-term exploration of their own ideas. In addition, the Talent Factory provides access to research infrastructure and close collaboration opportunities with members of the CTC Science Team, who will support and coordinate key operational tasks to ensure the smooth and efficient progression of research activities. In parallel, the CTC Service Hub supports the realization of your research ideas through dedicated infrastructure and expertise.

Committed to fostering emerging talent and cultivating groundbreaking research, the Talent Factory stands as a cornerstone of the CTC's vision for advancing scientific discovery and driving transformative change within the chemical industry. The CTC supports research across the full spectrum from fundamental science to applied innovation and technology transfer, ensuring that novel ideas can mature into impactful solutions for society and the economy.

Talent Factory Principal Investigator Profile

The CTC seeks to recruit exceptional Group Leaders for the Talent Factory to lead research groups within an interdisciplinary ecosystem alongside like-minded peers. The ideal candidate should demonstrate scholarly excellence as well as the ability and willingness to foster interdisciplinary collaboration across academia and industry, identify opportunities for broader impact, and mentor junior scientists and students. Candidates must hold a PhD and post-doctoral experience is greatly preferred. In addition to presenting project ideas for advancing a circular chemical economy and implementing state-of-the-art techniques, Group Leaders are expected to articulate how their proposed research contributes to the mission-driven framework of the two CTC “moonshots”: the Autonomous Laboratory (fully digitized, AI-driven chemical experimentation) and the Completely Recyclable Car (transforming chemistry towards a circular economy by designing new materials. Each Group Leader will have full responsibility for selecting their team members

and defining the structure of their group. We encourage interdisciplinary applicants, including but not limited to biochemists, physicists, computer scientists, engineers, computer scientists, engineers or mathematicians.

Talent Factory Calls and Pathways

Transformative research is at the heart of the CTC. Discoveries that change how a field thinks or works can begin as curiosity-driven basic research or as a targeted effort to solve a real-world problem, and the talent factory is built to support both. Its different types of calls span the full range from basic to translational research, so applicants can choose the route that best fits their goals, as well as the Group Leaders desired life path. Each call is either open or focused, and each is either academically or venture-oriented. Together, these calls form a flexible map rather than a one-way path. Independent of the call the goal is the same: to make transformative research possible, whether it begins as basic discovery or as translational work.

Talent Factory Promotion Structure

Group Leaders will be granted a fixed-term contract of four years in accordance with the CTC funding structure. During Phase I, Group Leaders will undergo annual reviews, with a comprehensive evaluation after three years. Upon a positive review, Group Leaders will be promoted to Phase II, allowing them to continue their research for an additional period of three years.

Funding

Group Leaders will have full funding for your own position, and up to 2.4 full-time equivalent positions (= 3 PhD students) depending on the project. These positions will be recruited progressively according to the project timeline and CTC's implementation schedule. These co-workers will be selected by the Group Leader based on the needs and focus of the research group. The starting and operating budget depends on the type of research pursued. Details are further discussed during the interview process.

The Selection Process

Suitable applicants will be invited to an online interview, followed by in-person interviews for shortlisted candidates. These interviews will include a presentation of the candidates' previous work and future research plans, as well as discussions with selected members of the CTC and the Scientific Director. In addition to scientific achievements, demonstrated inventiveness and contributions to technology development, including patents or other forms of innovation output, will be valued in the assessment of candidates. The

recommended candidate will then be submitted to an internal evaluation committee for endorsement. An official offer letter will be issued in writing to the successful candidate.

Your Application

CV

To ensure all research outputs are considered during assessment, candidates are asked to include a variety of research outputs in their CVs. In addition to listing publications, research output can include open data sets, databases, code, software, pre-prints, patents, commercial products, instruments, educational products, policy publications, and any other relevant outputs to which you have contributed.

Applicants are expected to report their publications, patents and any other research output correctly, including all authors in the same order as published. Joint authorships (e.g. co-first author, multiple corresponding author) must be properly indicated.

Eligibility

All applications must be comprehensive, clear, and understandable. They must be submitted by eligible scientists before the relevant call deadlines. Proposals failing to meet these criteria may be excluded from review. CTC calls, even when targeted, are open to all research fields in chemical research. Proposals that are deemed novel and aligning well with targeted calls will, however, be prioritized in the selection process.

All applications and associated supporting documentation undergo a thorough review to ensure compliance with admissibility and eligibility criteria. It is important to note that the evaluation of a proposal under such circumstances does not serve as confirmation of its admissibility or eligibility.

If it becomes apparent, at any stage, prior to, during, or after the peer review evaluation, that one or more admissibility or eligibility criteria have not been met (e.g., due to inaccurate or misleading information), the proposal will be rejected.

There are no nationality, gender, or age restrictions.

Leadership, Entrepreneurship, and Further Training

Group leaders of the CTC are expected to attend a workshop for “Leadership” and “Basics of Entrepreneurship” in the first year of their research stay. Both courses will be offered by the CTC. They will ensure that all Group Leaders will be provided with the tools to have a

successful research stay within the structures of the CTC and have the chance of validating whether their research can be transferred to market applications.

Research Data Management

The CTC, and the Talent Factory operate with a steadfast commitment to effective data management and the promotion of FAIR (Findable, Accessible, Interoperable, and Reusable) principles within its research endeavors. Recognizing the significance of data transparency and accessibility, Talent Factory scientists will be **obligated** to agree to good data management practices set and continuously developed by the CTC and its network partners. Group Leaders and their teams will be equipped with the necessary tools and resources to adhere to these requirements, from onboarding about standards for collection and processing to storage, dissemination, and archival.

In addition, the CTC emphasizes the importance of open access to research data and outcomes, including chemical data, computer code, algorithms, software, and workflows. By promoting open science principles, the CTC aims to enhance scientific collaboration, foster innovation, and maximize the impact of its research outcomes on the broader scientific community and society at large. Data dissemination shall undergo internal evaluation and approval in line with the CTC´s transfer strategy.

Research Integrity

The CTC maintains rigorous standards of research integrity, emphasizing honesty, objectivity, and accountability. Instances of misconduct, including fabrication, falsification, or plagiarism, will be thoroughly investigated and addressed. Training and support on ethical practices are provided to ensure responsible conduct of research. Through open dialogue and peer review, researchers uphold principles of integrity, fostering public trust and advancing scientific knowledge.