

Submissions are no longer possible !

Funding Initiative

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Applicants 83

Innovative Methods for Manufacturing of Multifunctional Surfaces

I. Topics and Objectives

Manufacturing of multifunctional surfaces is a key-technology for the fabrication of future high-tech products. However, the functionalization of the surface is usually achieved by one or several “add-on processes” e. g. by sequential, in most cases final, production steps. Examples for these processes are coating, smoothing, and patterning of surfaces as well as the defined modification of the subsurface properties of a component by hardening or alloying. These “classical” production routes have several drawbacks from economical as well as ecological points of view (higher failure risk, longer production times, little flexibility, no clean process, higher amount of scrap and material usage, etc.).

Recent developments in surface science and technology provide new opportunities for modern production engineering concepts through the integration of surface modification techniques into existing manufacturing routes or the design of completely new production systems.

Therefore, the Volkswagen Foundation intends to provide incentives to work on problems for next generation, hybrid manufacturing systems focusing on the functionalization of surfaces.

The aim of the funding initiative is to establish the scientific knowledge base that leads to innovative production processes and technologies for the well defined functionalization of surfaces and subsurface zones. Projects funded should lead to an optimized process with respect to technology, economy, and/or ecology. The initiative focuses on the combination of surface functionalization (going beyond the pure shaping of a component) with new manufacturing methods aiming at a significant reduction of production steps.

The proposals are expected to

- explore innovative concepts, significantly beyond the state of the art, with respect to their technical potential and viability, and
- consider an entire process chain. It is understood that the technical implementation of the investigated concepts may well require a time span up to 10 years.

The scientific problems outlined above should be addressed by integrated interdisciplinary research in close collaboration of engineers and natural scientists. Therefore, **only cooperative projects** involving a minimum of two teams with complementary expertise will be eligible for funding. At least one of the research teams has to belong to the engineering sciences. In addition, the Foundation addresses researchers from all natural sciences including the respective theoretical subdisciplines.

II. Restrictions

Conventional attempts, such as pure manufacturing, characterization or theoretical modeling of surfaces and their specific functionalization without a connection to the technical realization in a production system will not be considered.

Furthermore, the Volkswagen Foundation does not consider funding of topics which are the subject of funding programs of other institutions such as the Deutsche Forschungsgemeinschaft (DFG), and the German Ministry of Education and Science (BMBF).

III. Funding Possibilities and Evaluation Criteria

The VolkswagenStiftung can only allocate grants to scientific institutions. Participation of scientists from abroad is also possible if at least one of the teams of the integrated project is based at a scientific institution in Germany and that its contribution is essential to the project. The details of the specific need for the collaboration should be given in the proposal. The coordinator of the integrated project should be a member of a German research team. Scientific institutions located in the USA can only apply for additional costs, i.e. travelling and project meetings, since additional funding from the US-side is expected. An involvement of companies is possible, but will be not supported financially by the Foundation. In addition, the project results have to be published promptly and freely.

Integrated research projects can be supported with funds for personnel, recurring and equipment costs, including travel allowances. For projects with international partners subsidies for the travel and residence costs involved with the exchange of personnel for a limited

time (up to one year) among the participating research teams in Germany and abroad can be granted. The funding of a research project is initially restricted to a maximum of three years. Extension up to a total of five years is only possible after renewed application and peer review as long as the funding initiative is open.

Scientific workshops or summer schools with up to 60 participants dealing with topics related to the initiative are supported according to the modalities of the funding initiative "Symposia and Summerschools". Young scientists (graduate students, postdocs) are encouraged to apply for travel funds and organization costs for workshops planned under their own responsibility.

IV. Application and Assessment

Criteria for funding include:

- a) originality of the research topic, in comparison with the state of the art
- b) concept for achieving an integrated and interdisciplinary cooperation of research teams that timely contributes towards achieving the objectives of the proposed research
- c) justification of the selected approach for achieving the proposal objectives, and
- d) the relevance of expected results for future development and regarding the benefits of industry and society.

All outlines and full applications have to be written in English. The review of the research proposals is a two step process. First, only short outlines are solicited and can be submitted by the respective deadline published on the Foundation's homepage. Based on the result of a scientific assessment by an international and interdisciplinary panel the Founda-

tion decides which outlines are accepted for full application. An approval of an outline cannot be considered as a commitment to fund the project. The Foundation finally decides upon funding after evaluation of the full proposals which again includes peer review. Please consult the following check-list regarding the details of an application.

Please submit your application electronically (e-mail, disk or cd-rom; preferably application and each appendix as separate pdf-files) and also in hard copy.

There are no preproposals required for symposia, summerschools and postdoc/graduate student workshops. In this case, applications should be submitted at least four months before the meeting. Further details and the respective checklist can be found in the Information for Applicants for "Symposia and Summerschools" which is available on the Foundation's website.

V. Contact

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Check-list for *Pre-proposals* in the Funding Initiative “Innovative Methods for Manufacturing of Multifunctional Surfaces”

Pre-proposals should be presented in English and have to be in written as well as in electronic form. The maximum length of a pre-proposal (without enclosures) is 5 pages (cover page + 4 pages project description, font size min. 11 pt). The deadlines given on our homepage refer to the date as postmarked.

The following information is needed for the evaluation of a pre-proposal:

- cover sheet:
 - Project title, project period, total budget
 - addresses and signatures of all applicants with indication of the coordinating scientist
- project description:
 - aim of the project / motivation / main goals of the project
 - state of the art and own starting point
 - approach / methodology
 - expected main results
 - contribution of the project to the goals of the funding initiative
 - expertise of the participating research groups and expected interdisciplinary synergy
- budget summary for each group:
 - personnel costs
 - recurring costs
 - non-recurring costs

As enclosure:

- curriculum vitae (1 page each) with list of up to five recent publications of every applicant.

Please send your application to:

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