

COLLABORATION AGREEMENT

for the conduct of the M-ERA-supported joint research project

„Ceramics with sensing capabilities for high temperature applications” (CENTAUR)

– hereinafter referred to as the „**Project**“ –

between

Technische Universität Chemnitz

Straße der Nationen 62

09111 Chemnitz

Germany

(on behalf of its department „Department of Lightweight Structures and Polymer Technology“ and the professorship “Measurement and Sensor Technology”)

– hereinafter referred to as „**TUC**“ –

and

Luxembourg Institute of Science and Technology

Maison de l'innovation

5, Avenue des Hauts-Fourneaux

L-4362 Esch-sur-Alzette

– hereinafter referred to as „**LIST**“ –

and

Technical University of Liberec

Studentská 1402/2

461 17 Liberec 1

Czech Republic

– hereinafter referred to as „**TUL**“ –

and

POLPUR, spol. s r.o.

Kudrnáčova 1287

51101 Turnov

Czech Republic

– hereinafter referred to as „**POLPUR**“ –

– TUC, LIST, TUL and POLPUR hereinafter individually also referred to as a „**PARTNER**“, or collectively as the „**PARTNERS**“ –

– TUC, LIST and TUL each individually also referred to as Research Partners –

– POLPUR individually also referred to as Industry Partner –

Recitals

- (1) Joint research projects are collaborative projects involving several partners from the education, research and/or industrial sectors that each perform specific tasks toward the completion of the Project.
- (2) M-ERA.NET is an EU-funded network of public funding organizations which has been established to support and increase the coordination of European research programs and related funding in materials science and engineering. The M-ERA.NET consortium will contribute to the restructuring of the European Research Area (ERA) by operating as a single innovative and flexible network of funding organizations.
- (3) German partners of the M-ERA.NET consortium are, inter alia, the Sächsisches Staatsministerium für Wissenschaft, Kultur und Tourismus (herein referred to as “SMWK”) as well as SMWK’s project implementing agency, the Sächsische Aufbaubank, Pirnaische Straße 9, 01054 Dresden, Germany (hereinafter referred to as “SAB”).
Luxembourgish partners of the M-ERA.NET consortium is, inter alia, the Fonds National de la Recherche (hereinafter referred to as “FNR”).
Czech partners of the M-ERA.NET consortium is, inter alia, Technology Agency of the Czech Republic (hereinafter referred to as “TA CR”).
The Project is executed by SAB on behalf of the SMWK for the Saxony Partners, by FNR for the Luxembourgish Partners and by TA CR for Czech Partners (SMWK, FNR and TA CR hereinafter collectively also referred to as the “**Funding Agencies**”).
- (4) TUC, LIST, TUL and POLPUR have filed separate applications for funding from the respective Funding Agencies.

Subject to appropriate funding by the SMWK (for the Saxony Partners), by the FNR (for the Luxembourgish Partners) and by TA CR (for the Czech Partners) for the benefit of each Partner, the Partners shall cooperate on the Project in accordance with the following terms and conditions (hereinafter referred to as the “**Agreement**”):

§ 1 Subject-matter of the Agreement

- (1) The subject-matter of this Agreement is a collaborative cooperation of the Partners within the framework of the Project funded by the SMWK, FNR and TA CR under the abbreviation CENTAUR.
- (2) The individual, objectively coordinated applications of the individual Partners for funding from the SMWK, FNR or from the TA CR determine the tasks to be carried out within the framework of the Project and its distribution to the individual Partners as summarized in Section § 2 below.
- (3) Content and scope of the work to be completed by each Partner and the applicable schedule are set out by the respective notices from SMWK, FNR or TA CR granting the funding towards the respective Partner (hereinafter referred to as “**Approval Letter**”). Each Partner will carry out its work in accordance with its Approval Letter on its own responsibility. The Approval Letters of the Partners form an integral part of this Agreement.

§ 2 Tasks of the Partners

- (1) TUC will be coordinating the CENTAUR project and will contribute to the implementation of the project through two departments. The Textile Plastics and Hybrid Composites (TKV)

group will focus on the activities in WP1 that revolve around oxide/oxide CMC synthesis and processing. Here in particular the development of the material and the process to integrate the fibres in the additive manufacturing process. The Measurement and Sensor Technology (ETIT/MST) group, on the other hand, will focus primarily on the functionalisation of the CNTs, the sensor realization, characterisation and sensing capabilities integration within WP2.

- (2) The main work effort of LIST will be in modelling and design of CMC components, where LIST will use numerical methods, mainly finite element modelling, for predicting mechanical, thermal and electric performance of CMC components. LIST will also intervene in some characterization tasks.
- (3) The 3D printing tasks will be carried out at TUL in collaboration with TUC. TUL and POLPUR will also contribute to the material characterization, processing and testing the performance of the produced samples. Further TUL assume the testing for the CENTAUR prototypes developed in WP1.
- (4) The project description and the overall work and time schedule is derived from the combined content of the Approval Letters of all partners (hereinafter referred to as "**Project Plan**"). The Project Plan is an integral part of this Agreement. The Partners may determine amendments to the Project Plan in meetings as set out in Section § 4 (4) below; the Project Coordinator will record any amendments in the minutes of the meeting and send copies thereof to all Partners. Changes to the Project Plan become effective upon written confirmation by each Partner and approval by the concerned Funding Agencies if required.

§ 3 Conduct of the collaboration within the Project

- (1) The Partners undertake to perform the coordinated tasks and work packages that are required for the conduct of the Project in compliance with the Project Plan including its most recent amendments. Any decisions on the organization or content of the Project should be made by mutual agreement.
- (2) Each Partner shall be solely responsible to its Funding Agency, namely either to the SMWK, FNR or to the TA CR, for the performance of the research and development work undertaken by that Partner in the framework of the Project.
- (3) The Partners exchange the contents, task descriptions, schedules and all information necessary for the implementation of the Project, unless otherwise agreed below. The exchange of sensitive data shall only be made via secure data connections, e.g. via TUC Cloud (Access for the Partners will be provided by TUC).
- (4) The Partners will keep each other informed on the progress of their Project-related performance by submitting reports on newsworthy developments to the Project Coordinator.
- (5) The Partners shall use any internal resources necessary to conduct the Project.

§ 4 Project coordination

- (1) The Partner responsible for the coordination of the Project will be TUC (herein referred to as "**Project Coordinator**"); the Project Coordinator's principal investigator will be Prof. Dr.-Ing. habil. Daisy Nestler. The Project Coordinator may change its principal investigator by written communication to the other Partners.
- (2) The Project Coordinator's task will include, but not be limited to, scientific and administrative management of the Project, as well as being the main contact point between the Partners

and the SMWK. The Project Coordinator will be assisted by LIST, namely by Dr. Gaston Rauchs, to manage the Luxembourgish funding topics; LIST will be the main contact point between the Partners and the FNR. Further the Project Coordinator will be assisted by TUL and POLPUR, namely by Ing. Mateusz Fijalkowski, Ph.D. (TUL) and Mr. Jaroslav Polák (POLPUR), to manage the Czech funding topics. TUC, LIST, TUL and POLPUR may change its assisting person by written communication to the other Partners. In the event of deviations from the Project Plan, the Project Coordinator shall inform the Partners as soon as possible and recommend actions to remediate any problems.

- (3) The Partners shall inform the Project Coordinator without undue delay of any events that may seriously endanger the successful completion of the entire or parts of the Project for scientific, technical, economic, or factual reasons, including compliance with the Project Plan. The Project Coordinator shall duly inform the Partners concerned.
- (4) The Project Coordinator's principal investigator or another employee of the Project Coordinator will (i) organize the meetings necessary for the performance of the Project Plan (usually once every month), (ii) send out invitations to these meetings including the agenda as well as a list of open points within a reasonable time period prior to the meetings (generally, at least ten calendar days in advance), (iii) chair the meetings, and (iv) prepare and distribute the minutes. Representatives of all Partners will participate in these meetings. In general, meetings are held electronically (telephone conference, video conference); the Project Coordinator may set up a meeting in person if required.
- (5) Each Partner will identify a contact person responsible for the Project-related work undertaken by that Partner (hereinafter referred to as "**Contact Persons**"). Any change in the Contact Persons must be communicated to the Project Coordinator and all Partners without undue delay. The Partners will try to ensure staff continuity with regard to the Contact Persons. The initial Contact Persons will be:
 - TUC/SLK/TKV: Univ.-Prof. Dr.-Ing. habil. Prof. h. c. Dr. h. c. Lothar Kroll, Reichenhainer Straße 31/33, 104, D-09126 Chemnitz, mail: slk@mb.tu-chemnitz.de, phone: +49 371 531 23120.
 - TUC/MST: Prof. Olfa Kanoun, Reichenhainer Straße 70, W207, D-09126 Chemnitz, mail: olfa.kanoun@etit.tu-chemnitz.de, phone: +49 371 531 36931.
 - LIST: Dr. Gaston Rauchs, Maison de l'Innovation, 5, Avenue des Hauts-Fourneaux, L-4362 Esch-sur-Alzette, mail: gaston.rauchs@list.lu, phone: +352 275 888 4508.
 - TUL: Ing. Mateusz Fijalkowski, Ph.D., Ústav pro nanomateriály, pokročilé technologie a inovace, Bendlova 1409/7; Liberec 1; 460 01, mail: mateusz.fijalkowski@tul.cz, phone: +420 776 610 692
 - POLPUR: Mr. Jaroslav Polák, Květinová 1542, Turnov, 51101, mail: polak@polpur.cz, phone: +420 608 556 884

§ 5 Publications

- (1) Each partner can publish his own Project Results without discrimination. In doing so, reference shall be made to the cooperation Project in an appropriate form. There is an obligation to inform the other Partners of the publications in advance.
- (2) Publications containing information of the other Partners that is to be treated confidentially require the prior written consent of the Partner concerned. No Partner may unreasonably refuse its consent. Consent shall be deemed to have been given if the Partner concerned

does not express a contrary opinion within two months of receipt of the intended publication (original text). The consent requirement does not apply to Partners if, in fulfilment of their legal or statutory obligation to publish work results, they only publish basic scientific statements or knowledge that do not constitute information to be treated as confidential by the Partner concerned.

- (3) In the case of exhibitions on the Results of the cooperation Project, the other Partners involved will be clearly indicated. Products that have emerged as a result of the joint research work will also be presented accordingly. Nothing in this article shall be deemed to contradict or limit the confidentiality obligations of the Partners to protect the confidential information of the other partners in accordance with article 12.
- (4) The Partners affirm that publications of student theses or scientific qualification papers, such as bachelor and master theses, dissertations and post-doctoral theses will not be affected. Nothing in this article shall be deemed to contradict or limit the confidentiality obligations of the partners to protect the confidential information of the other Partners in accordance with article 12.
- (5) Publication obligations of the Partners towards the Funding Agency shall remain unaffected by this. In particular, due regard to the Funding Agencies in publications and dissemination activities may be required in accordance to the rules of each Funding Agency.

§ 6 Rights to Background IP

- (1) Each Partner is and will remain the owner of any results and findings (regardless of whether an industrial property right has been applied-for or not), in particular of know-how, inventions, industrial property rights, copyrights and computer programs, developed either prior to the commencement of the Project or outside the Project (hereinafter collectively referred to as "Background IP"). Unless otherwise stated in the following provisions, no rights are granted in or to the Background IP.
- (2) The Partners shall identify in annex 1, to the best of their knowledge and belief, (i) any Background IP, provided that this is deemed necessary for the conduct of the Project or the use of Results, and (ii) of any third-party rights that may limit a Party's use of the Background IP.

§ 7 Rights of use for Background IP

- (1) To the extent that the Partners' Background IP is necessary for the conduct of the Project and there are no adverse third party rights, the Partners will grant each other a royalty-free, non-exclusive, non-transferable, and non-sublicensable right of use for Background IP listed in annex 1 limited to the term and purpose of the Project.

§ 8 Rights to Results

- (1) "Results" shall be any and all results, including reports and documentation, which the Partners have developed in the course of their work under the Project (for example, know-how, inventions, industrial property rights, copyrighted results, software).

- (2) Any Results developed solely by employees of one Partner shall be the property of that Partner. Subject to its obligations towards the SMWK, FNR or the TA CR, this Partner will have the right to apply for intellectual property protection in its own name and at its own cost, but will be obligated to inform the other Partners of any applications made in connection with the Project.
- (3) Any Results developed by employees of several Partners jointly in an indivisible way (hereinafter referred to as “**Joint Inventions**”) shall be the joint property of those Partners in proportion to each Partner’s employee’s inventive contribution. Further legal requirements (e.g. for co-authors and co-inventors) remain unaffected.
- (4) In the case of Joint Inventions the Partners involved shall come to an agreement on filing applications for intellectual property protection (including the determination of the lead party in each individual case), maintenance and defence of such intellectual property rights and the related costs, and record their agreement in writing; as a rule, the costs will be allocated in proportion to each Partner’s employee’s inventive contribution. The Partners whose employees have contributed to a Joint Invention will endeavour to ensure that written records are kept and each inventor’s contribution is determined by mutual agreement and recorded in writing.
- (5) If a Partner is not interested in (i) filing an application for protection of the inventions developed under the Project, (ii) prosecuting an application, or (iii) maintaining an intellectual property right granted under the Project, that Partner, to the extent legally and factually possible, shall offer the other Partners the option to acquire its rights under conditions to be agreed on. The option must be exercised within twelve (12) weeks by way of a binding written acceptance letter. The obligation to offer intellectual property rights to the other Partners will end twelve (12) months from expiry of this Agreement. The Partner offering the rights shall assist in their assignment and may claim the expenses required for this purpose.

§ 9 Rights of use for Results

- (1) Each Partner will have the right to use its own Results developed under the Project without restriction; section 8 above concerning the rights to Results will remain unaffected.
- (2) The Partners shall grant each other a royalty-free, non-exclusive, non-transferable, non-sublicensable right of use for the Results limited to the purpose of allowing the other Partners to implement their own tasks in the Project and only during term of the Project, unless there are conflicting third-party agreements.
- (3) After the end of the Project, the Industry Partners shall grant each other non-exclusive, non-sublicensable and non-transferable (with the exception from affiliated companies), royalty-free, irrevocable, perpetual rights of use of the Results. With regard to Results in the form of computer programs, rights of use shall only be granted regarding the object code unless, exceptionally, the provision and use of the source code is individually agreed in writing. This does not imply a right to market the Results of the other Partners.
- (4) The provisions of Section § 9 (3) above shall apply mutatis mutandis between the Research Partners and the Industrial Partners, but with the restriction that the granting of rights of use for Results shall not be granted royalty-free but instead only on reasonable terms, which must be agreed in writing before use, as well as only on request, which must be asserted in writing within one year of the end of the Project. When calculating an appropriate usage fee, the contributions made by the Research Partner within the framework of the cooperation to the creation or support of the invention shall be taken into account.
- (5) After completion of the Project, each Research Partner shall have unrestricted access to the Results of the other Partners for the non-commercial purposes of internal research and

development as well as for teaching purposes. This provision does not impose an obligation on the Partners to grant more extensive rights of use than the rights to be granted according to the Sections § 9 (2), (3) and (4) above.

- (6) When a research partner and an industrial partner are involved in a joint result, the Partners concerned will carefully assess the imbalance in the contributions with regard to No. 2.2.2 of the Union Framework for State Aid for Research, Development and Innovation (2014/C198/01), document the result and, if necessary, the contractual partners concerned will compensate for the imbalance, if legally necessary.
- (7) Each Partner acknowledges that acts of use with regard to the information, equipment and objects obtained from another Partner do not constitute a right of prior or continued use.
- (8) The Partners may grant each other more extensive rights of use subject to reasonable terms and conditions to be agreed on.

§ 10 Costs

Each Partner shall bear its own costs and expenses incurred in the performance of this Agreement (using the SMWK, FNR or the TA CR grant).

§ 11 Collaboration, R&D Third Party Services

- (1) The Partners may commission third parties to perform work or services specified in the Project Plan under the terms and conditions of § 11 below. For this purpose the Partners shall enter into separate written agreements that must not conflict with this Agreement.
- (2) Where a Partner commissions a third party to provide research and development services under the Project, that Partner must ensure that the other Partners enjoy no less than the same rights to the third party's results they would enjoy had the commissioning Partner itself developed the results.
- (3) Prior to commissioning research and development services to third parties under the Project, the Partners must inform the Project Coordinator in writing, who will in turn inform the other Partners.
- (4) A Partner that commissions a third party to provide research and development services under the Project will be responsible therefor, in particular, the third party's compliance with the confidentiality obligations set out in this Agreement.

§ 12 Confidentiality

- (1) Each Partner shall treat the confidential information (including, but not limited to, know-how, documentation, project tasks, and business transactions) obtained from another Partner in connection with the Project (hereinafter referred to as "**Confidential Information**") as confidential. Confidential Information means any information that is either clearly marked as confidential or ought to be considered confidential from its nature.
- (2) The Partners commit themselves, regarding the Confidential Information,
 - to keep it strictly confidential and not to disclose or duplicate it without the consent of the other Party, or to make it available to third parties, in whole or in part;

- to provide its employees, executive bodies, vicarious agents and consultants (hereinafter referred to as "**Authorized Persons**") access only in return for the delivery of a non-disclosure agreement comparable with this Agreement, insofar as they are not already subject to a comparable agreement by virtue of law or contract;
- to use this Confidential Information for the sole purpose of carrying out the Project and to disclose this information only to those Authorized Persons who require it;
- to take appropriate precautions to ensure Confidentiality in accordance with this Agreement.

In the case of data transmission via generally accessible networks, reasonable actions shall be taken to protect against access by third parties (e.g. as suggested in Section § 3 (4) above).

- (3) The confidentiality obligations pursuant to Section § 12 (2) above shall not apply to Confidential Information that
- were known to the receiving Partner prior to disclosure; or
 - were known or generally available to the public before disclosure, or become known or generally available to the public after disclosure without the receiving Partner infringing this Agreement; or
 - correspond to information disclosed or made available to the receiving Partner by a third party without imposing an obligation of confidentiality on the Receiving Partner, unless the disclosure by the third party, to the knowledge of the Receiving Partner, is contrary to an obligation of confidentiality on the third party; or
 - developed independently and outside the Project by an employee or an agent of the Receiving Partner who had no knowledge of the information required to be kept confidential.

Where disclosure of Confidential Information is ordered by a public authority or a court, the receiving Partner shall be entitled to disclose such information to the extent required by the order, provided that the receiving Partner promptly notifies the disclosing Partner of such an order in order to exercise its rights, to the extent permitted by law, limits disclosure to the minimum necessary, and upon disclosure discloses the confidentiality of the information.

- (4) The obligation pursuant to pursuant to Section § 12 (2) above shall also not apply vis-à-vis the SMWK, FNR and the TA CR if such Confidential Information is available to the SMWK, FNR and the TA CR under the terms and conditions of the individual funding decisions of the Project.
- (5) The confidentiality obligations under this section will expire five (5) years from termination of the Agreement.

§ 13 Warranty, Liability

- (1) The Partners shall carry out the performances undertaken by them under the Project properly, to the best of their knowledge, and according to the current state of science and technology. The Partners will inform each other, to the best of their knowledge and belief, as soon as they are or become aware of any third-party intellectual property right conflicting with the Results; a search for such rights is no Partner's duty. There will be no warranty between the Partners; in particular there will be no warranty that the Background IP and/or the Results are or will be economically and technically usable and unencumbered by third party intellectual property rights.

- (2) In the event of a breach of material contractual obligations (i.e. obligations the non-performance of which would make it impossible to duly perform the Agreement and the compliance with which can, as a rule, be relied upon by the other Partners), the Partners shall be liable for damage caused by intent and gross negligence; however, in the event of simple negligence, liability shall be limited to the contract-typical, foreseeable damage. The contract-typical, foreseeable damage is limited to half of each Partner's grant.
- (3) In all other cases, the Partners shall be liable to each other only for damage caused by intent or gross negligence.
- (4) As far as legally possible, any and all liability of the Partners for indirect and consequential damage, including losses such as but not limited to loss of profit, revenue or contracts or the like, shall be excluded.
- (5) The limitation and/or exemption from liability provided for in Sections § 13 (2) through § 13 (4) shall not apply (i) in the event of injury to life, body, or health, (ii) if a Partner has fraudulently concealed a defect, (iii) if a Partner has assumed a guarantee for the quality of a performance and/or (iv) if a Partner is mandatorily liable under applicable law.

§ 14 Term

- (1) Subject to the award of a SMWK, FNR and TA CR grant, this Agreement shall come into force and effect after signature by all Partners upon commencement of the term of the Project as specified in the grant Approval Letters, and shall end upon expiry of each grant period unless terminated earlier or otherwise ended. The Partners currently expect the Project to run from August 01, 2020 to July 31, 2023.
- (2) Sections § 6, 7, 8, 9, 12, 13,14 and 16 shall continue to apply beyond the termination of this agreement according to its meaning and purpose .
- (3) Each Partner may terminate this Agreement for good cause. Good cause shall exist, in particular, in the following cases: (i) a significant reduction or modification of the grant; (ii) discontinuation or reduction of the funding of one or more Partners; (iii) withdrawal of a Partner; (iv) or if the Results show that the goal of the Project cannot be achieved. Notice of termination must be given in writing to the Funding Agencies, the Project Coordinator and the Partners. The Partner giving notice of termination will submit a final report and, upon request, return any records, documentation, data media and objects obtained from the other Partners insofar as these are not archived in electronic backups or are subject to mandatory storage obligations. The withdrawal of one Partner will not affect the Agreement between the remaining Partners; they find appropriate modalities in the event of termination for good cause.
- (4) In the event of withdrawal of a Partner pursuant to Section § 14 (3) above
 - Sections § 12, § 13 and § 16 of this Agreement shall continue to apply beyond termination of the Agreement.
- (5) In view of the consequences the withdrawal of a Partner may have on the overall Project, any withdrawal of a Partner must be coordinated with the SMWK, FNR and the TA CR.

§ 15 Accession of additional partners

In the event that additional companies or research institutions receive, after close coordination with the Project Coordinator, public grants in connection with the Project, they will have the right, upon

agreement with the other Partners, to accede the Agreement under the same terms and conditions, subject to an accession agreement to be entered into.

§ 16 Final provisions

- (1) The Partners are legally and functionally independent entities. As such, they will continue to operate on the market and in their business/research fields.
- (2) The Partners do not enter into any corporate or company-like relationship. In particular, the cooperation does not qualify as a joint venture or the like. Neither Partner will have the right to act as agent of the other Partner or Partners.
- (3) Any alterations, modifications, amendments and collateral agreements must be in writing otherwise shall be null and void. This requirement may be waived only in writing.
- (4) Any assignment of claims or rights under this Agreement is excluded.
- (5) In the event that one or more provisions of this contract are invalid, the remaining provisions of this contract shall remain unaffected and in force. The Partners will make a legally effective replacement provision that comes as close as possible to the invalid provision in economic terms. The same shall apply in the event of a contractual gap.
- (6) This Agreement shall be subject exclusively to the law of Belgium to the exclusion of the conflict of laws provisions..
- (7) The Partners will try to settle any disagreements arising out of this Agreement, including disagreements that may arise after termination of the Agreement, amicably. If this is not successful the Funding Agencies will be requested to settle the disagreement.
- (8) If a settlement according to Section § 16 (7) above cannot be reached, all disputes arising in connection with this Agreement, or its validity, shall be finally settled by the courts in Brussels.
- (9) The SMWK's, FRN's as well as the TA CR's rights will not be affected by this Agreement and shall prevail over this Agreement.

[Signature pages to follow]



For Technische Universität Chemnitz:

28.1.2021 _____

Place, date

Signature
Project manager 1

6.2.2021 _____

Place, date

Signature
Project manager 2

6.2.2021 _____

Place, date

Signature
President of the Technische Universität Chemnitz



For Luxembourg Institute of Science and Technology:

3.2.2021_____

Place, date

Signature

Signature



For Technical University of Liberec:

10.2.2021 _____

Place, date

Signature

Signature



For POLPUR, spol. s r.o. :

11.2.2021 _____

Place, date

Signature

Signature

ANNEX 1 – LIST OF BACKGROUND IP

As to LIST, it is agreed between the Parties that, to the best of its knowledge the following background is hereby identified and agreed upon for the Project. Specific limitations and/or conditions, shall be as mentioned hereunder:

Describe Background	Specific limitations and/or conditions
Numerical modelling software: a) ComPoSTe b) COSMASS Know-how on modelling of material properties of fiber-reinforced composites and design and durability of composites componentes.	Background not needed for the implementation of any tasks by the other Partners or use of their Results but only by LIST for the implementation of its own tasks. No Partner shall have any access rights to such Background.