

PRESS RELEASE

07 | 21

PRESS RELEASE

September 14, 2021 | Page 1 / 4

Vocational training becomes more attractive for industrial parts cleaning

Project launch for the joint project "InnoVET CLOU - Future Cluster for Innovative Vocational Training"

The project "CLOU" (FKZ 21IV007D), funded by the Federal Ministry of Education and Research, supports adaptive and pathway-open education and training (DQR 5-7) in the chemical and pharmaceutical industry, which at the same time opens up technical innovations to vocational training. In cooperation with network partners from industry, research and education policy, this leads to excellent vocational qualification offers and learning locations.



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Companies, especially small and medium-sized enterprises (SMEs), face a dilemma: How can skilled workers be recruited, qualified and retained in a more targeted manner today and in the future? Up to now, it has not been possible for finished apprentices to obtain a company-specific, higher professional qualification up to DQR-7 (German Qualifications Framework, level 7) after completing their vocational training. This leads to skilled workers considering only university studies as a

further career option. Such qualified specialists are thus often lost, especially to small and medium-sized enterprises.

This is where the "CLOU - Future Cluster for Innovative Vocational Training" project comes in. In its four-year project phase, it develops industry-specific training programs, qualifies vocational training personnel and consolidates the structures and content created in three vocational centers of excellence in the new federal German states. CLOU is funded by the Federal Ministry of Education and Research (BMBF) within the framework of InnoVET, an innovation competition.

CLOU supports the attractiveness, quality and equivalence of vocational education and training compared to higher education with a focus on the chemical and pharmaceutical industry through various measures. It develops, tests, evaluates and transfers "bridging qualifications" from DQR-5 for horizontal and vertical further education. This is done taking into account the respective company requirements and individual needs



as well as the learning background. The goal is reliable professional learning path and career planning based on personalized and company-specific measures.

In the future cluster for innovative vocational training, additional qualifications are being created for physics, chemistry and biology laboratory technicians, such as the "Industrial Cleaning Technology". In addition, further qualifications for chemical technicians, pharmaceutical technicians and laboratory assistants to become vocational specialists (DQR-5), bachelor professionals (DQR-6) and master professionals (DQR-7), with a focus on digitalization and connected production/laboratories as well as occupational safety / responsible care (an initiative of the chemical industry to improve companies in the areas of environment, safety and health).

Additional qualification "Industrial Cleaning Technology"

The additional qualification "Industrial Cleaning Technology" is being designed and built up on a modular basis by the Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP together with SBG, and will later be tested in practice in a very concrete way. The great demand for such a qualification was recorded in the online survey recently conducted by the Business Unit Cleaning of Fraunhofer (www.reinigung.fraunhofer.de/en) about the market and trends in industrial component cleaning, the results of which will soon be published in a study.

In order to improve the permeability between training and study, the project is developing a digital competence measurement method that promotes the recognition of acquired learning content and competencies in both directions. The competence measurement method provides learners with feedback for their self-assessment as well as their further development.

In order to strengthen the competencies of training and education personnel and to improve the quality of training, CLOU designs and tests qualification programs. In particular, the targeted transfer of technical innovations from research and development into company practice is to be supported. The use of digital media in professional practice creates, among other things, new types of communication spaces to support learning and work processes.

CLOU brings together three vocational training service providers, from the new Federal German states, with a focus on the chemical industry, as well as six other network partners from industry and research. The CLOU network structures and educational offerings will be established by founding three centers of excellence for vocational training, with integrated inter-company training, at the locations Dresden, Berlin and Schkopau.

The Business Unit Cleaning of Fraunhofer will provide information on the current status of the project, further details and training opportunities for industrial cleaning technology at this year's parts2clean in Stuttgart, Germany, October 5 - 7, 2021 at booth no. B22, hall 4.

07 | 21

PRESS RELEASE

September 14, 2021 | Page 2 / 4

Business Area Cleaning of Fraunhofer at parts2clean 2021

Date: 5. – 7. October 2021
Trade fair center, Stuttgart, Germany
Hall 4, booth B22

07 | 21

.....
PRESS RELEASE

September 14, 2021 | Page 3 / 4
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Expert forum at parts2clean 2021

- 5. October 2021
 - Session 1 „Basics in industrial parts cleaning, 11:40 am
 - CLOU - An offensive for professional qualification in industrial parts cleaning, Frank-Holm Rögner, Business Area Cleaning of Fraunhofer

 - Product presentation, 12:50 pm
 - Presentation of the current study: Market and trend analysis in industrial parts cleaning, Frank-Holm Rögner, Business Area Cleaning of Fraunhofer

- 6. October 2021
 - Session 4 "Cleaning for medical and pharmaceutical technology, 3:00 p.m.
 - UV-activatable TiO₂ coating for prevention of germ accumulation and biofilm formation in siphons, Linda Steinhäüßer, Fraunhofer FEP

About the project CLOU:

Project duration: 01.12.2020 – 30.11.2024
Funding reference: FKZ 21IV007D

Funded by the Federal Ministry for Education and Research

Goals of the project

- Qualification offerings for the chemical and pharmaceutical industry on DQR 5-7 and development of additional qualifications
- Establishment of three centers of excellence in educational institutions for the chemical industry in the new federal German states
- Digital competence measurement method for the recognition of learning content and for individual educational planning
- Qualification concept for training and professional education personnel
- Development of adaptive qualification structures

Cluster Partners

- Sächsische Bildungsgesellschaft für Umweltschutz und Chemieberufe Dresden (SBG Dresden),
- Bildungswerk Nordostchemie e.V. (bbz Chemie),
- Ausbildungsverbund Olefinpartner gGmbH (AVO),
- Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP, www.fep.fraunhofer.de/en

- Hochschule für Technik und Wirtschaft Dresden (HTW Dresden), University of Applied Sciences, Faculty of Agriculture/Environment/Chemistry, Chair of Technical Chemistry (Prof. Harre),
- Technical University of Dresden (TU Dresden),
 - Faculty of Education, Professional specialization laboratory and process technology; didactics of chemistry (Prof Niethammer),
 - Faculty of Education, Chair of Adult Education, Focus on Continuing Vocational Education and Comparative Educational Research (Prof Bohlinger),
- Technical University of Darmstadt, Didactics of Technology (Prof. Tenberg),
- Research Institute for Leather and plastic sheets, Freiberg Instruments gGmbH (FILK),
- Helmholtz-Zentrum Dresden-Rossendorf e.V. (HZDR)

07 | 21**PRESS RELEASE**

September 14, 2021 | Page 4 / 4

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INNOVET

GEFÖRDERT VOM

**biBB** Bundesinstitut für
Berufsbildung

Gefördert als InnoVET-Projekt aus Mitteln des Bundesministeriums für Bildung und Forschung.

The **Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP** works on innovative solutions in the fields of vacuum coating, surface treatment as well as organic semiconductors. The core competencies electron beam technologies, roll-to-roll technology, plasma-activated large-area and precision coating as well as technologies for organic electronics and IC design provide a basis for these activities. Thus, Fraunhofer FEP offers a wide range of possibilities for research, development and pilot production, especially for the processing, sterilization, structuring and refining of surfaces as well as OLED microdisplays, sensors, optical filters and flexible OLED lighting. Our aim is to seize the innovation potential of the electron beam, plasma technology and organic electronics for new production processes and devices and to make it available for our customers.