

## NEWSLETTER

### FRAUNHOFER REINIGUNG - DIE HIGH-TECH-PLATTFORM RUND UM REINIGUNGSPROZESSE



The year continues turbulently and even after the successful start of Fraunhofer Cleaning with a new office in Dresden, we would like to inform you again today about news from the network of Fraunhofer Cleaning.

Find out more in the newsletter about current developments following the cancellation of the parts2clean 2020 trade fair, the planned parts2clean Online Day and other expert events. In addition, you can expect interesting contributions on energy efficiency in cleaning and resource efficiency through remanufacturing, as well as news on "Market and Trend Analysis in Industrial Parts Cleaning".

In the second interview "Let's talk!" Jakob Barz from Fraunhofer IGB answered our questions this time.

Enjoy reading.

## Fraunhofer Cleaning now also available on Twitter, Facebook and co!

The time has come! Fraunhofer Cleaning is now also represented in the social media. Don't miss out on news from the community and the industry. Whether [Twitter](#), [Facebook](#), [Instagram](#), [Xing](#) or [LinkedIn](#), FRei is represented everywhere. Take the chance, network with other members of the community and stay constantly informed about cleaning technology topics.



## Expert for industrial component cleaning – need for further training versus uncertainty



In the current turbulent situation with rising infection rates, many companies are still experiencing travel restrictions and a great deal of reluctance to attend events in the fall. We are currently noticing this very clearly at our planned basic seminar on cleaning technology (23.-25.09.2020). The many telephone inquiries with an urgent need for further training are only matched by a few concrete bookings. In order to offer participants and speakers planning security, we are now focusing on the already announced spring date 2021 and

unfortunately have to cancel the seminar in September. Until then, we will continue to provide you with current information regarding cleaning technology, e.g. at the parts2clean [online-day](#).

You will learn basic knowledge about methodical and systematic procedures in cleaning technology where it is developed: at Fraunhofer Cleaning. Here you will have the opportunity to exchange ideas with other participants and experts from the most diverse fields.

Further details, as well as information about events during the Corona pandemic can be found on our [website](#)!

## The parts2clean 2020 is cancelled Long live the parts2clean Online Day!



As already announced, parts2clean, the leading international trade fair for industrial parts and surface cleaning, will unfortunately take a break this year due to the corona pandemic. Nevertheless, there is good news regarding the expert forum: In a condensed form, Deutsche Messe AG and Fraunhofer Cleaning will host a parts2clean Online Day on October 27th, 2020, where both an interesting lecture program in the style of the expert forum, as well as versatile product presentations by exhibitors will be offered. We look forward to your (virtual) visit! Further details regarding participation, as well as the program, will follow shortly on the parts2clean and Fraunhofer Cleaning websites.

[More information.](#)

## Market and trend analysis 2020

The studies "Market and Trend Analysis in Industrial Parts Cleaning" from the years 2007 and 2012 are still of great interest today, as they are the only ones of their kind in the German-speaking world. In order to obtain current trends and insights into the requirements and processes in cleaning technology, Fraunhofer Cleaning is currently working on a new edition of the study for 2020, with the support of Markus Pfeilschifter, who is devoting himself to this study in his master's



thesis in industrial engineering. The list of questions is currently being processed. We welcome Marcus Pfeilschifter to the team! We would like to ask for your support in participating in the online survey and to inspire many more colleagues and partners to do so. Only a large number of completed surveys provides a good basis for representative results from which you can all benefit! We will inform you in time about the start of the survey in mid-September!

[To the previous studies.](#)

## Let's talk... Interview with a member of Fraunhofer Cleaning

In our new series of interviews, each newsletter introduces a member of the Fraunhofer Cleaning in more detail. For the second newsletter we have prepared an interview with Dr. Jakob Barz from [Fraunhofer IGB](#). Read more about his career and his personal view on the goals, potentials and aspirations of Fraunhofer Cleaning.

### 1. How did you join Fraunhofer Cleaning?

Our institute has long been a member of the Fraunhofer Cleaning. I originally come from the field of plasma technology, where I have often dealt with the topic of cleaning and purity, and some time ago I took over the representation of the institute in the Fraunhofer Cleaning from my predecessor.

### 2. What goal have you set yourself for your work at Fraunhofer Cleaning?

The goal is of course to provide our clients and project partners with the best possible support for their questions. This also includes presenting the technical possibilities on many occasions at trade fairs, specialist presentations and conferences in order to submit concrete proposals for solutions. I would like to make greater use of the expertise of my colleagues who are working in the field of cleaning and purity with completely different professional skills.

### 3. What would you like to pass on to the customers of Fraunhofer Cleaning?

The Fraunhofer Cleaning includes a wide range of different competencies. This goes beyond what we can shortly present only or on trade fairs to the outside world. Therefore, it is always worth asking.



4. **What does the Fraunhofer IGB offer in cleaning technology?**

We deal with cleaning technologies, for example plasma processes up to the development of biosurfactants. This also includes the disinfection of surfaces. Accordingly, we also offer analytics. This starts with chemical and physical surface analysis and goes right through to microbiological evaluation (bacteria, spores, pyrogens, viruses).

5. **What makes you a competent partner in cleaning technology?**

A personal focus is on surface analysis: we use it not only to validate cleaning processes, but we also carry out many analyses of products that have failed in quality assurance or, in the worst case, in the field. In order to help the customer to avoid the defects, it is necessary to go through the entire process chain together and to narrow down the source of the error. In the case of material composites, it is unfortunately often one single inappropriate cleaning step, activation or similar, which did not quite fit: an invisible detail that is only noticed at the end. According to Wolfgang Pauli: "God made the bulk; the surface was invented by the devil." Our analytics team is quite persistent, we want to understand the problem, otherwise we are not satisfied either.

At the same time, we know the challenges from the other perspective: We develop coatings and functionalize surfaces ourselves. Of course, the question of suitable pre-cleaning automatically comes into play and we are actively expanding our portfolio of tricks and tips.

6. **What do you wish for the industry?**

The topic of surfaces and cleaning will continue to accompany us quite crisis-proof: New production technologies bring new requirements (electric mobility with batteries or fuel cells are just one example). I hope and wish that Germany will remain as competent and well-positioned in the future as it is today.

7. **What is urgently needed so that the next big step can be taken in the field of cleaning technology?**

Good question: until recently I could not have given a real answer to this question because there is a suitable technology for almost all questions concerning cleaning technology. Today I think the big challenge is balancing between the current pandemic and sustainable technology development. We experience how suddenly technological progress, which we take for granted, suddenly enters into competition with another topic. I am convinced that the decisive factor for Germany as a business location will be how we succeed in taking the step towards the technologies required for climate and environmental protection despite the pandemic. This was a very big challenge even before Covid-19, but now, it has become even tougher. At present people often only talk about risk. But we are also witnessing the emergence of completely new ideas (also for cleaning technology) and how previous niche products are experiencing a boom. We should now really pay attention that the strong driving forces of the German industry - for example, the automotive and mechanical engineering industries - as well as new technology companies and start-ups are prepared for the future in the best possible way. Technological innovation brings new requirements for material properties with it, which then also benefits cleaning technology.

## Energy efficiency in cleaning technology with Industry 4.0



The Lab for Energy Efficiency makes solutions hands-on and tangible

### **Energy efficiency as an integral aspect of the digital factory**

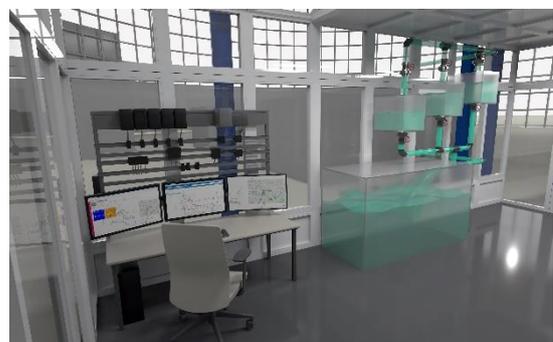
The developments of digitalization, and in particular those of Industrie 4.0, are offering manufacturing companies ever more new opportunities to monitor and increase their energy efficiency. Industry actors have, however, pointed out the lack of a clear overview of

practically tested possibilities and solutions for increasing energy efficiency. Users find that many procedures with controlling interventions cannot be directly adopted in running operations, particularly when it comes to serial production. With its broad-based testbed at the Production Technology Center (PTZ) Berlin and the domain-specific expertise of its scientists and engineers, [Fraunhofer IPK](#) is ideally situated to test and demonstrate solutions for monitoring and raising energy efficiency.

### **LIVING INNOVATION AT THE BERLIN TESTING FIELD**

The cleaning of components is a good example of how individual production steps are closely interlinked and integrated into the overall factory system due to advancing digitalization. The cleaning technology must not only follow the clocked work of series production, but also react flexibly to varying orders. In the background, the supply technology works with large reserves to ensure availability even under extreme conditions. The overproduction and retention of media sometimes holds considerable potential for energy saving. With the help of Artificial Intelligence, supply technology and cleaning processes can cooperate with each other in a foresighted and agile way, which brings ecological and economic advantages.

With the help of an exemplary cleaning process, the possibilities of current and future technologies for industrial cleaning technology will be demonstrated. AI-supported image processing not only detects the components automatically, but also identifies areas to be cleaned. Based on this information, the subsequent cleaning process and parameters are automatically adjusted and controlled. Moreover, the L4EE has an additional focus on production processes. For instance, single aggregates of processing machines can be manipulated with regard to their energy efficiency without endangering the entire manufacturing process. The closer the intervention is to the actual manufacturing process, the more critical integration of automated machines becomes, and the more urgent the need to test it experimentally under real conditions outside of serial production. An interdisciplinary team at Fraunhofer IPK is drawing up the L4EE agenda. Customers are going to be able to take part in open workshops and seminars or in individually arranged consultations and training programs. Visitors to the lab can interactively set scenarios and cause disturbances in the process, thus putting the AI-supported procedures to the test. Is reinforcement learning more suitable for my application than conventional model-based regulation? What information does the operator need? And what skills and knowledge are needed to use current communication and controlling technologies for machine learning?



## Resource efficiency through remanufacturing of commercial vehicle components – Fraunhofer IGCV



The requirements for technical cleanliness in the field of industrial parts production have increased considerably in recent years. Within the framework of the ASPIRE project funded by the Bavarian Research Foundation, an interdisciplinary consortium consisting of research institutes and industry has successfully researched over the last 3.5 years how used components can be brought to the quality standard of a new product by defining cleaning process chains.

[More information.](#)

## 3rd Congress "Technical cleanliness - effects, analysis and prevention of contamination"



The Fraunhofer IPA is a contributor to the 3rd Interdisciplinary Congress in Darmstadt. The conference offers a public forum to inform and exchange information about current developments and trends in the field of technical cleanliness. A highlight here is the visit to ESOC, the operation center of the European Space Agency (ESA). [Website of the event.](#)

## Double Congress: Filmic and particulate impurities



From 10 to 11 November, both [the 11th Trade Congress Technical Cleanliness in Assembly and Production Processes](#) and the [5th Conference on Filmic Contamination](#) will take place in Bad Gögging near Ingolstadt. Thus the possibility exists of informing and exchanging information in one room on the problem of particulate contamination and in the other room on film contamination. Researchers of the FRei members Fraunhofer IPA, Fraunhofer IGCV, Fraunhofer IPM and Fraunhofer FEP will participate in the events.

## Technologies for cleaning and hygiene „Made in Saxony“



Contaminations are omnipresent and can be found in all areas of life and work. In order to avoid far-reaching effects, especially in the field of life sciences, different stages of cleaning up to hygienisation and sterilisation are necessary. Technologies from Saxony are available in many places. In order to build bridges between users and manufacturers as well as development and science from Saxony, the Saxony Economic Development Corporation together with the Fraunhofer FEP is organizing a project workshop

on the topic of "Hygienization" on **September 22, 2020**. Be part of it and network with speakers and participants who will bring interesting lectures and perspectives and present the latest technologies. We would like to discuss challenges and ideas with you in a panel discussion and industry corners.

[More information about the event.](#)

## Nächster Newsletter November 2020



The next newsletter of Fraunhofer Cleaning will be published in November 2020. Stay informed about the current topics in the cleaning community, get a review of the first parts2clean Online Day and a preview of exciting topics in 2021. You are welcome to submit contributions from the world of industrial cleaning technology for the next newsletter. And: Feel free to recommend us to others!

[Subscribe to our newsletter and stay updated!](#)