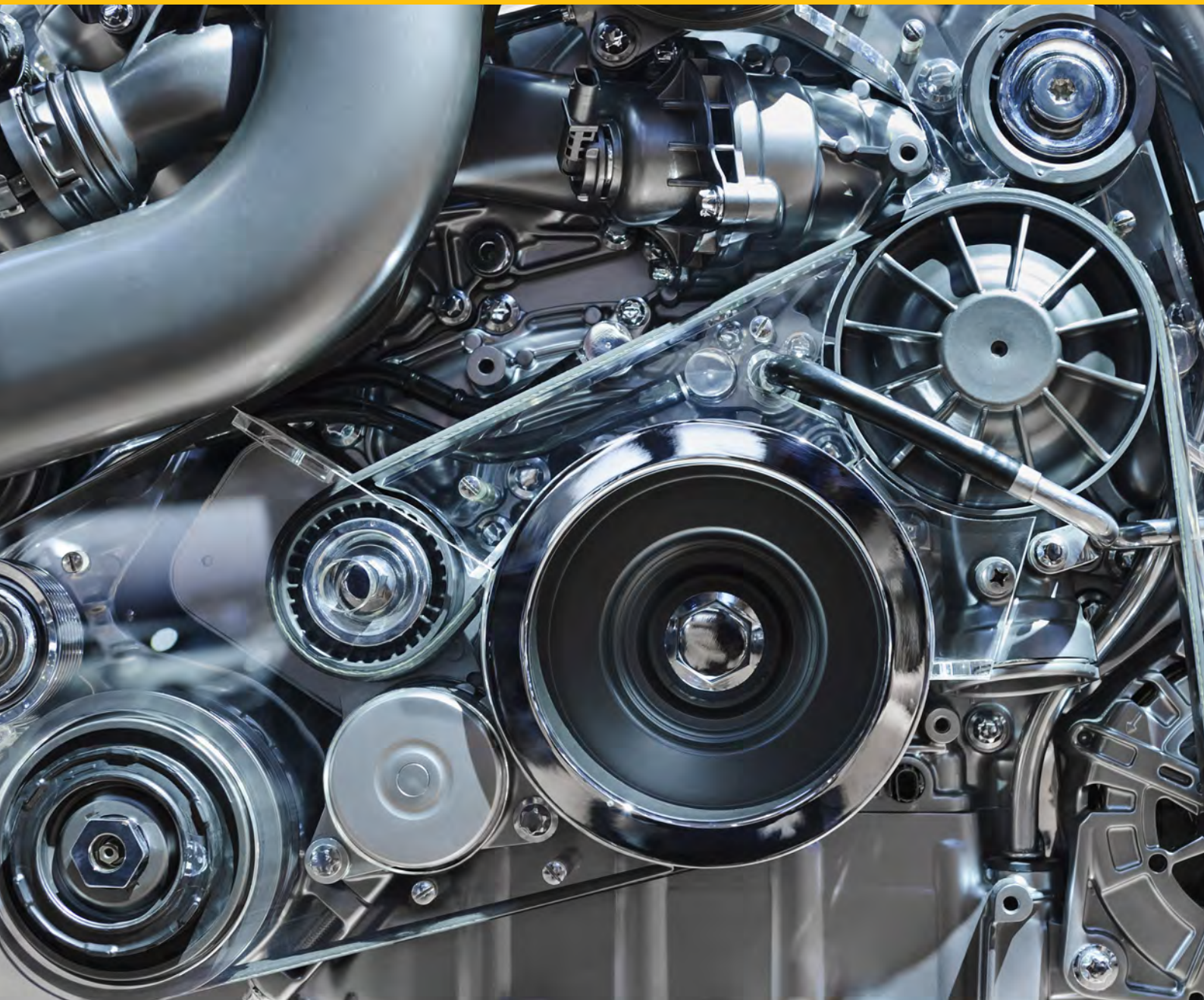
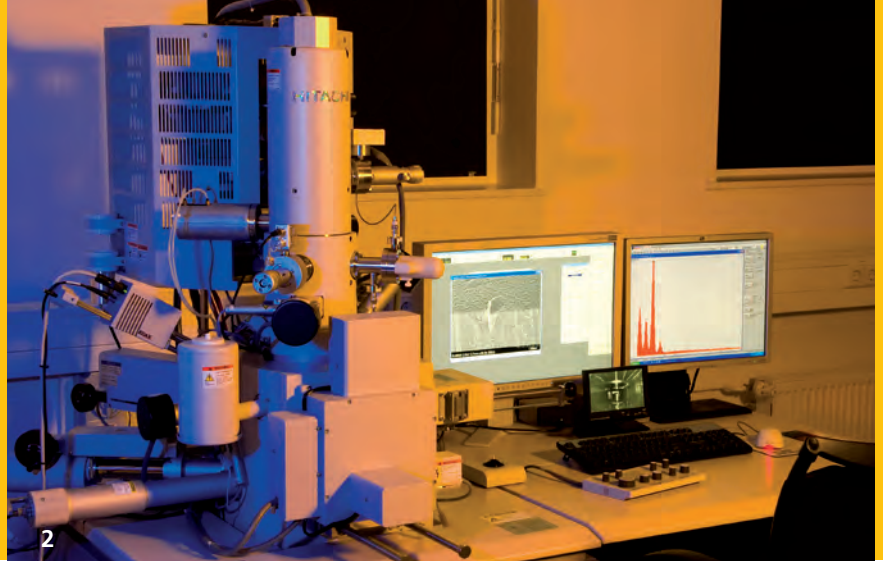


**SURFACES –
CLEANING AND PRE-TREATMENT**
Non-polluting – Functional – Reliable!





1



2

Total solutions from a single source

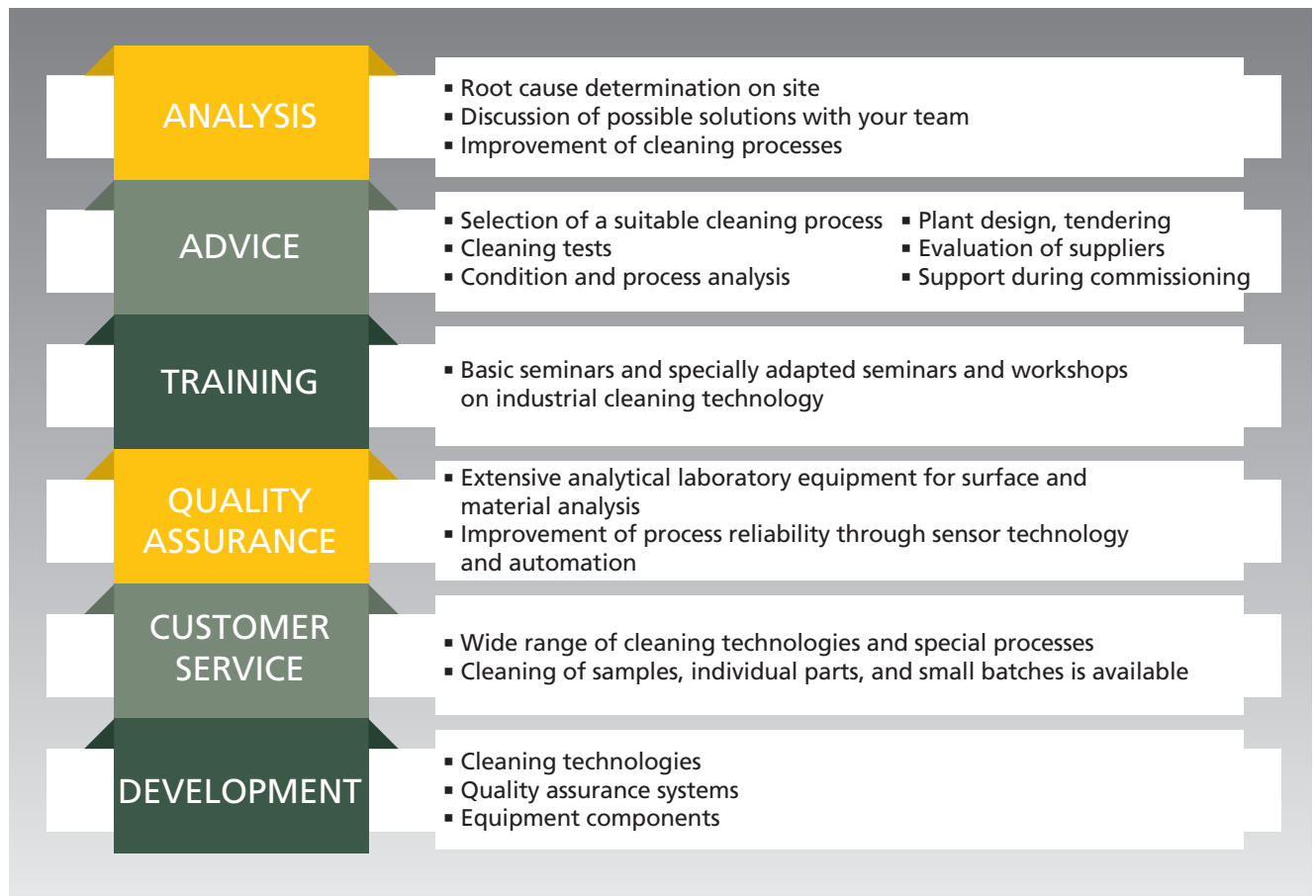
The removal of dust, grease, rust or other contaminants from surfaces is an important step in the value chain when manufacturing products.

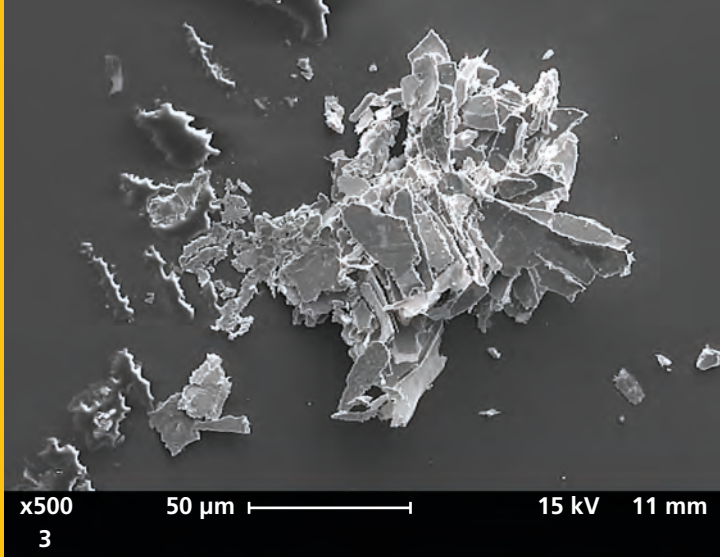
Lack of knowledge or care in these cleaning processes often results in high costs and greater production effort. Loss of product functionality and product recalls can be the result.

Fraunhofer FEP has many years of experience in the field of surface cleaning, especially in connection with subsequent production steps. Our experts can advise you on all aspects of the process chain: On the avoidance of contamination in advance, on different cleaning processes and environmentally compatible process management, as well as on quality control.

Together with other Fraunhofer institutes of the Business Area Cleaning of Fraunhofer – The High-Tech Platform for Cleaning Processes, we are familiar with the specific requirements in a wide range of industries and products (including those areas where hygiene is especially important) and can offer you independent solutions based on your needs for your cleaning task.

Our offer





Main focus

Industrial cleaning of components and semi-finished products

- Component cleaning as a production process
- Cleaning processes integrated into production
- Cleaning in accordance with requirements
- Environmentally friendly processes

Surface treatment before coating

- Integration into the coating process
- Demanding quality of surfaces
- Understanding of adhesion mechanisms
- Know-how in the field of PVD coating facilitates development of suitable cleaning processes
- Experience in the field of metal, ceramics, glass, and plastics
- Activation or passivation of material surfaces

Cleaning in hygienic areas

- Hygienic production of foodstuffs, and of products in the fields of medical engineering, pharmaceuticals, life sciences, and bioprocess engineering
- Cleaning, disinfection, and sterilization of products and packaging
- Biomedical testing laboratory for evaluation of cleaning quality
- Seed dressing with low-energy electrons

Cleaning for the preservation of cultural assets

- Analysis of historical materials and their contamination
- Gentle methods for cleaning sensitive material complexes
- Temporary protection of surfaces
- Treatment of damaged paper documents

Technologies

- Wet-chemistry fine cleaning for strip metal and components
- Wet-chemistry non-abrasive cleaning for precision parts made of glass and plastics
- High-rate plasma cleaning under vacuum for strip metal, plastic film, and components
- Localized functional surface cleaning with electron beam in vacuum
- Sterilization and disinfection with accelerated electrons, X-rays, and UV
- Further processes available within Business Area Cleaning of Fraunhofer

TITLE PHOTO

*Precision components
(© AMatveev / shutterstock)*

- 1 *Flexible laboratory system for industrial cleaning of components and strip metal*
- 2 *FE scanning electron microscope SU8000 (Hitachi)*
- 3 *SEM image of a particulate contaminant on a coated Nd:YAG crystal*
- 4 *Hollow-cathode discharge arc during sputter etching*

Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP

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