



Process Technology Center (PTC)

Natural Product Technology

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With the Natural Product Technology unit, the PTC enables development and piloting of industrial manufacturing processes for consumer health plant products.

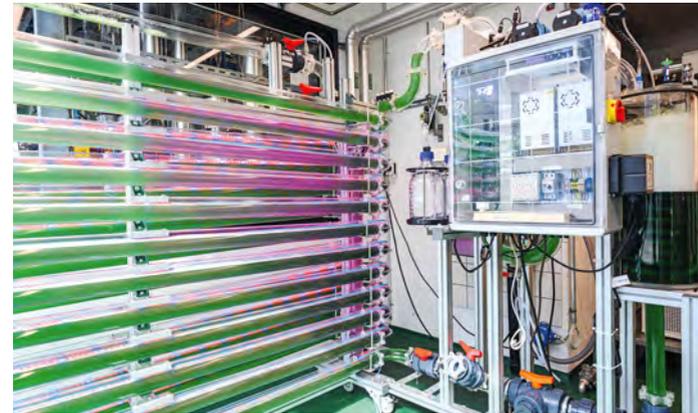
Natural products are derived from plant components using both conventional and special extraction processes. For example, compounds can be extracted with supercritical CO₂ or using membrane contactors, with batch sizes of up to 200 litres.

Coarse and fine mills can also be used to break down large-leaf starting material; the extracts obtained can be further processed e.g. with spray/cone drying or lyophilization, followed by vacuum packaging, bottling, canning, drum filling or ointment production including tube filling. In addition, the PTC has a microbrewery with nanofiltration equipment and a semi-automatic bottle filler for the flexible production of alcoholic and alcohol-free beer. Extensive analytical methods enable comprehensive process control and documentation.

In order to meet stringent hygiene standards, the natural substances area is access-controlled and has a mobile Cleaning-in-Place (CIP) system. Cleaning protocols can be tested and carried out using a 1000-litre test facility (EHEDG rig; cooperation with Endress+Hauser). The natural products area of the PTC is available for research and development partners from industry and academia and is used extensively in the training of HLS students.

Infrastructure:

- Solid-liquid extractor (Samtech DIGMAZ, 20 l, incl. thin film evaporation and chamber filter press)
- Spray drying (Büchi)
- Cone dryer/homogenizer (IKA Magic-Plant)
- Microbrewer (1 hl) incl. automated mash system and 2 cooled fermentation tanks (Gruber)
- Membrane degassing system (200 l/h degassed water < 10 ppb residual oxygen)
- Nanofiltration plant for dealcoholisation of beer (1 hl/h)
- Microfiltration plant with automatic backwash system (up to 500 l/h)
- Mobile Cleaning-in-Place (CIP) plant with preparation tank (100 l) and dosing station for acid/lye/cleaning agent and CIP return pump
- EHEDG-Test Rig for cleaning of plant components as well as cleaning development and validation
- Membrane extraction plants for membrane-supported aeration and degassing, emulsion-free liquid-liquid extraction and extraction and membrane distillation (up to 20 l/h continuous)
- Hygiene zone (Non-Ex area)



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The FHNW incorporates nine faculties:

- FHNW School of Applied Psychology
- FHNW School of Architecture, Civil Engineering and Geomatics
- FHNW Academy of Art and Design
- **FHNW School of Life Sciences**
- FHNW Academy of Music
- FHNW School of Education
- FHNW School of Social Work
- FHNW School of Engineering
- FHNW School of Business

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