

PRESS RELEASE

Pfeiffer Vacuum supplies turbopumps for GANIL large-scale research facility in France

- **Trustful cooperation between GANIL and Pfeiffer Vacuum**
- **Innovative vacuum technology in heavy-ion research**
- **HiPace turbopumps for the new experimental area at the SPIRAL2 particle accelerator at DESIR**

Asslar, May 11, 2020. Pfeiffer Vacuum has received several major orders from the French large-scale research facility GANIL (Grand Accélérateur National d'Ions Lourds) (National Large Heavy Ion Accelerator) for the supply of turbopumps and custom vacuum chambers.

The French national research center GANIL in Normandy has been in operation since 1983. It is one of the largest heavy-ion accelerators, together with the GSI Helmholtz Center for Heavy Ion Research. GANIL maintains numerous international collaborations, in particular with GSI in Darmstadt for the development of the FAIR (Germany) and SPIRAL2-DESIR (France) projects.

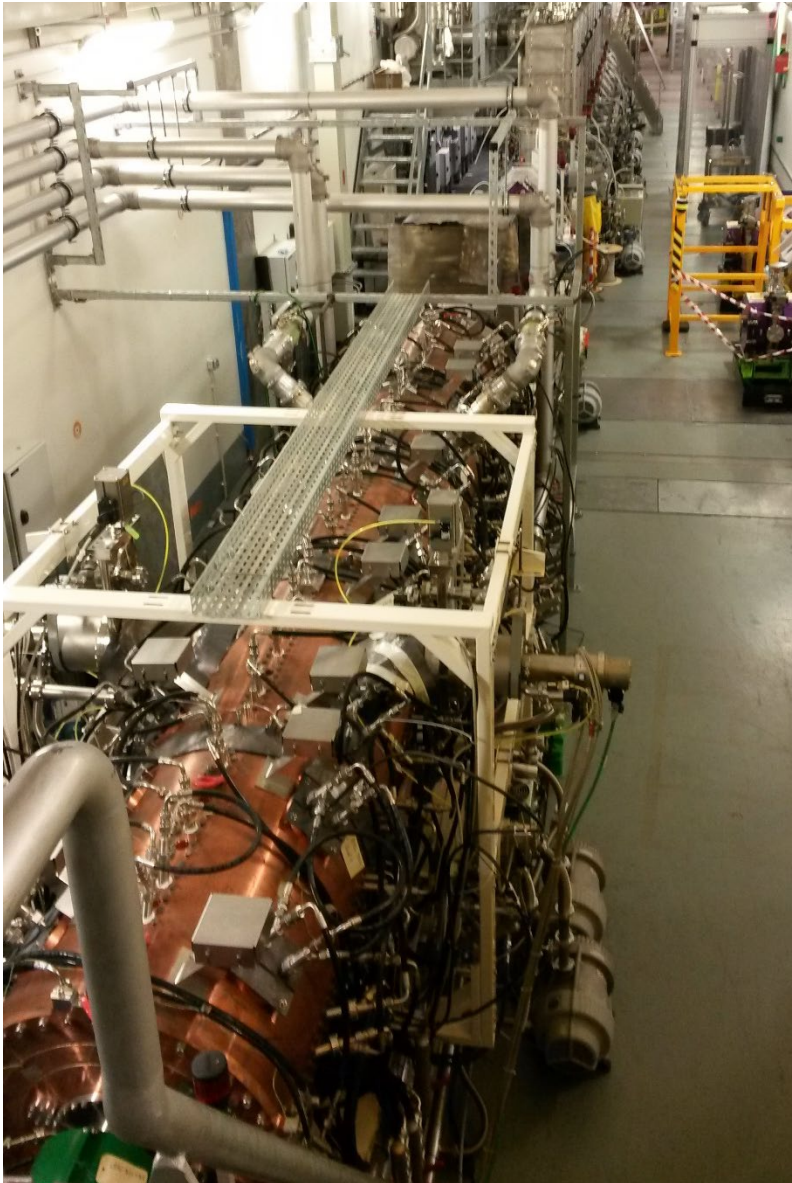
The particle accelerators there generate a wide range of ion beams, which are used in particular to produce very heavy atomic nuclei. These exotic nuclei are created by the collision of high-energy particles and do not occur in nature under normal conditions.

The ion beams produced in the accelerator are used for basic research in the fields of fusion research, astrophysics, materials science, radiation therapy, radiobiology, and atomic and nuclear physics.

The SPIRAL2-DESIR facility guides the ion beams generated to the various experiments, and electrostatic steerers and quadrupoles are required for this beam guidance. To enable the accelerated particles to move as freely as possible in the beam lines, a clean ultra-high vacuum (UHV) is essential. Extremely powerful and reliable vacuum generation is required in order to maintain such low pressure.

At GANIL, the decision was made to use HiPace 700 M turbopumps and vacuum chambers from Pfeiffer Vacuum. Dr. Dirk Budelmann, Market Manager for R&D at Pfeiffer Vacuum: “We are proud that our advanced technology has been selected for future research projects at GANIL. Together with the custom-made vacuum chambers, our turbopumps will be employed at the new SPIRAL2-DESIR linear accelerator.”

The HiPace M turbopumps used are characterized by their compact design, high gas throughput and low energy consumption. Their electromagnetic bearings are also called “active magnetic bearings” since the rotor position is permanently monitored and readjusted in real time. Thanks to automatic out-of-balance compensation, they ensure wear-free, low-vibration operation with continuous rotor stability. This is a reliable bearing technology that requires neither maintenance nor lubricants. The turbopumps are continuously being developed to meet the increasing technical requirements for particle accelerators. Specialized versions are available for various applications.



Caption:
SPIRAL2: Superconducting linear accelerator at GANIL (©P.Stroppa/CEA)

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About Pfeiffer Vacuum

Pfeiffer Vacuum (stock exchange symbol PFV, ISIN DE0006916604) is one of the world's leading providers of vacuum solutions. In addition to a full range of hybrid and magnetically levitated turbopumps, the product portfolio comprises backing pumps, leak detectors, measurement and analysis devices, components as well as vacuum chambers and systems. Ever since the invention of the turbopump by Pfeiffer Vacuum, the company has stood for innovative solutions and high-tech products that are used in the Analytics, Industry, Research & Development, Coating and Semiconductor markets. Founded in 1890, Pfeiffer Vacuum is active throughout the world today. The company employs a workforce of some 3,300 people and has more than 20 sales and service companies as well as 10 manufacturing sites worldwide.

For more information, please visit www.pfeiffer-vacuum.com.

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