ferry vatt

VACUUM UNIVERSE

VACUUM ENGINEERING AND TECHNOLOGY

ferryvatt.ru

FERRY VATT LLC offers a full production cycle for vacuum equipment, from engineering to commissioning. Our equipment and technologies have been applied in six main areas:
Vacuum and plasma deposition technologies for thin films and coatings: PVD, CVD, PECVD, ALD, etc.;

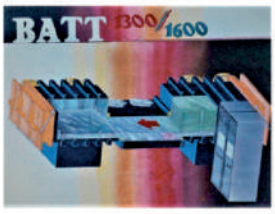
- Technologies for processing various materials in low-pressure RF plasma (CCP, ICP);
- Vacuum equipment for composite materials forming and vacuum impregnation of products with resins and varnishes;
- Climatic test facilities, space simulators, and electric propulsion testers;
- Vacuum furnaces of different application;
- Specialized industrial and laboratory vacuum and plasma equipment (equipment for growing single crystals, vacuum melting units, food freeze-drying, etc.).

30 Over 30 years in the vacuum equipment manufacturing market

160 Over 160 delivered projects in the development and manufacture of high-tech equipment

12 12 countries where our equipment is used12 countries where our equipment is used

HISTORY



Company Founded
First generation of vacuum units

1991

Introduction to the CIS and Eastern European markets

1998

Introduction to the international markets of Western Europe and the Middle East

2005

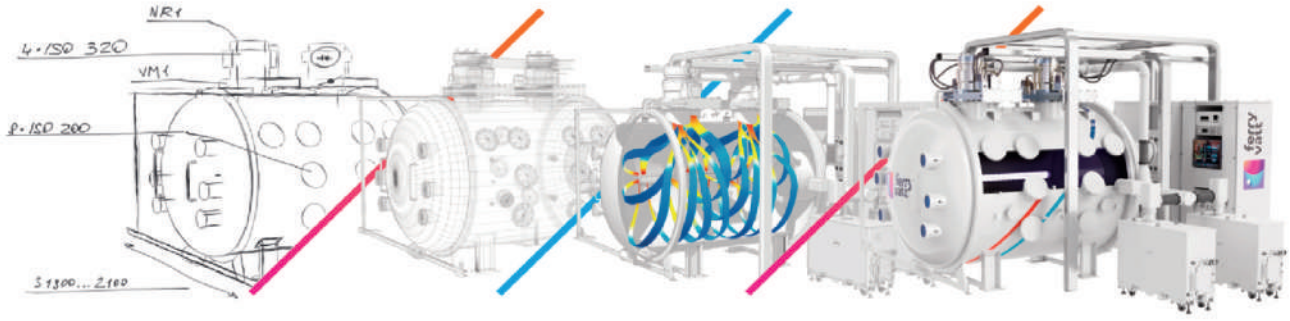
1995

VATT 1600 Series

Company Rebranding
Second generation of vacuum units

2007

VATT900 Series



IDEA

The strategic stage of project implementation is the reasonable choice of equipment configuration. Extensive experience in vacuum equipment engineering for a wide range of applications allows us to make the right key decisions at the initial stages.

ENGINEERING

Professional use of CAD/CAE design tools and physical process modeling enables us to efficiently and quickly solve unique design problems of any complexity, eliminating production costs.

IMPLEMENTATION

- In-house production
- Quality control
- Reliable components
- Customer witness technology testing and elaboration
- Staff training
- Post-sales support

TECHNOLOGIES

- Our R&D Resource Center allows us to continuously improve technologies and implement them in new equipment
- We utilize modern technological in-house resources

AUTOMATION

- User-friendly interface
- Manual and automatic control
- Production cycle programming
- Reporting
- Multi-level access
- Remote control

VATT 600x1200M-ED and VATT 600-b IMD continuous vacuum lines

2006-2009

VATT 4000/5000 vacuum rewinding units

2013-2014

Company rebranding Vacuum units of third generation

2019

2012

VATT U3P-800 zone melting units for single crystals

2015

VATT-5-VKP2.8 vacuum impregnation line

2022

VATT TIAC-1500/15 vacuum composite infusion line

SERVICES

FERRY VATT provides a full range of services in the field of vacuum equipment and technologies. Our motto is “Vacuum Universe,” and our mission is to help you solve any problems related to industrial vacuum.

ENGINEERING CONSULTING

Selection of technological solutions for various technical requirements.

R&D

Production engineering. Research and development. In-house R&D resource center.

EQUIPMENT DESIGN:

calculations, modeling, preparing documents for the Unified System for Design Documentation, Unified System for Technological Documentation, Unified System for Program Documentation, and Automated Control Systems. Modeling and calculation of physical processes in vacuum and plasma equipment: mechanical, gas-dynamic, electromagnetic, heat transfer processes, and plasma process modeling.

EQUIPMENT MANUFACTURING

In-house mechanical, electrical, assembly, and commissioning departments. Technology development within the company’s Resource Center.

MAINTENANCE

Warranty and post-warranty service. Equipment condition audit.

MODERNIZATION AND REPAIR

Obsolete equipment reconditioning and upgrade.

SALES

of equipment and components developed in-house and from third-party manufacturers.

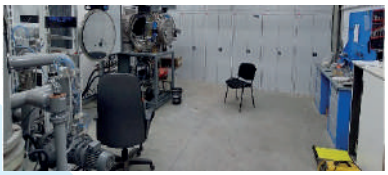
TRAINING

for company employees in the fundamentals of vacuum/plasma equipment and technologies, project management, fundamentals of nanotechnology, and CAD-CAE-CAM automation of engineering systems design.

OUR ADVANTAGES

- Many years' experience
- Quality control
- Certifications and licenses
- We manufacture, not resell
- We solve non-standard problems
- Turnkey equipment and technologies

FERRY VATT's quality control system is certified and meets ISO 9001 requirements. Our welding equipment and staff are NAKS-certified. Our managers, engineering staff, and technical staff are certified according to the qualification standards of the Russian Nanoindustry Association. Our developments have repeatedly received prizes and diplomas at international exhibitions.



POWER ENGINEERING

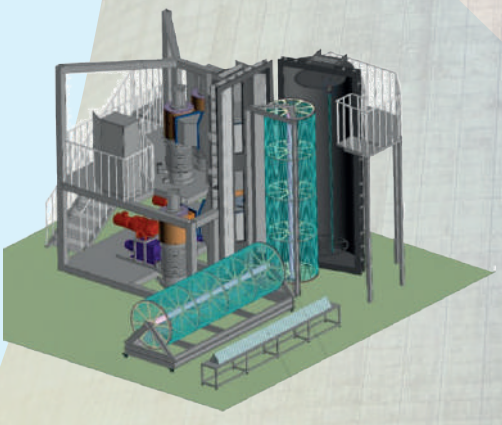
- Application of hardening, anti-corrosion, and tribotechnical coatings on turbine blades and other power equipment components
- Application of coating on dispersed catalysts (coated powders, core shell) for next-generation fuel cells
- Application of coating on film materials for supercapacitors
- Application of coating on materials and products for the nuclear fuel and energy cycle
- Plasma treatment and adhesion activation of the surfaces of power industry components and products for various manufacturing operations (gluing, paint coating, etc.)
- Vacuum impregnation of power industry components and products (impregnation of transformer coils, electric motor windings, and other components)
- Molding of power industry components and products from composite materials (housings and blades for wind turbines, etc.)
- Vacuum heat treatment of power industry components and products

PROTECTIVE COATINGS
FOR SLIDE GATES

ENERGY ABSORBING COATINGS
FOR SOLAR COLLECTORS

THERMAL BARRIER COATINGS
FOR TURBINE BLADES

VACUUM INFUSION OF WIND
POWER PLANT BLADES

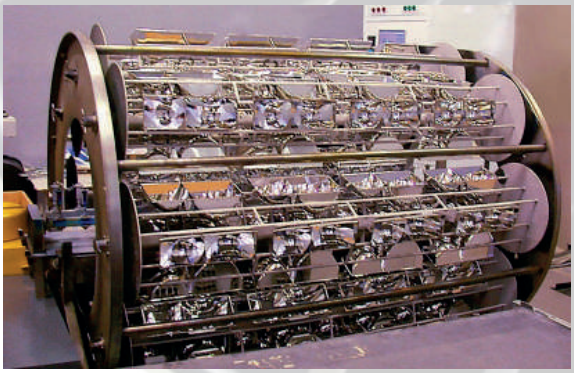


FUEL ELEMENT CLADDING COATING UNIT. "TOLERANT FUEL"

TRANSPORT

- Application of hardening and tribotechnical coatings on piston rings, plain bearings (liners), turbines, and other components of automotive, rail, and water equipment
- Application of special optical coatings on glazing elements, including selective optical filters, electrical heating coatings, and abrasion-resistant coatings
- Application of hardening and wear-resistant coatings on tools and fixtures for transport equipment manufacturing
- Application of decorative and functional coatings on vehicle interior components
- Plasma treatment and adhesion activation of surfaces of transport industry components and products for various manufacturing operations (gluing, painting)
- Molding of composite material components and products
- Vacuum heat treatment of transport industry components and products

APPLICATION OF DECORATIVE
COATINGS ON INTERIOR ELEMENTS



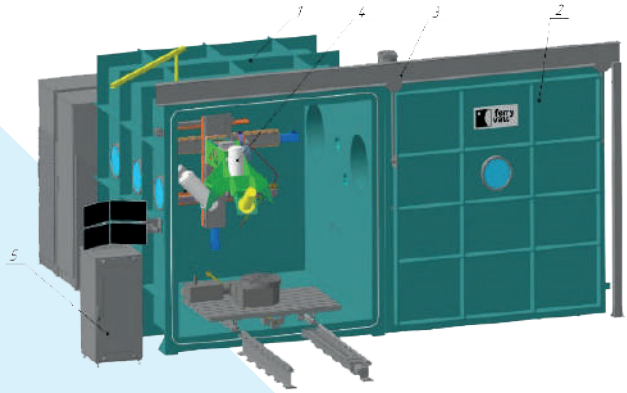
APPLICATION OF REFLECTIVE
COATING ON RENAULT HEADLIGHTS

VACUUM INFUSION
OF PD-35 HOUSING

VACUUM INFUSION
OF MS-21 "BLACK WING"

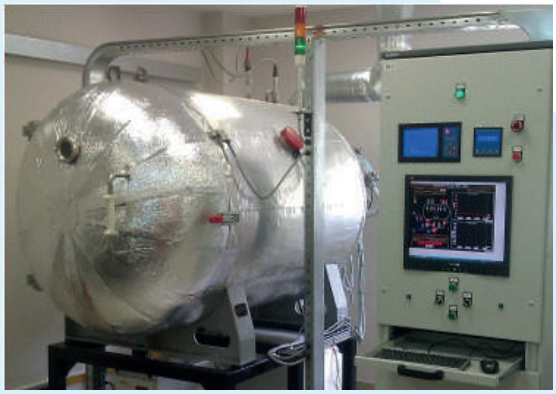
SPACE

- Application of hardening, tribotechnical, and thermal barrier coatings on turbine blades and other components for aircraft and spacecraft
- Application of special optical coatings on glazing elements of aircraft and spacecraft, including selective optical filters, electrical heating coatings, and abrasion-resistant coatings
- Application of protective, decorative and functional coatings on interior elements
- Plasma treatment and adhesion activation of component surfaces for various manufacturing operations (gluing, painting, etc.)
- Testing of aircraft and spacecraft components: space simulation, vacuum-heat-cold testing, and temperature-pressure testing
- Electric rocket engines testing
- Vacuum impregnation of components.
- Molding of aircraft and spacecraft components from composite materials
- Vacuum heat treatment
- Vacuum welding of aircraft and rocket housings and components



VACUUM ELECTRON BEAM 3D PRINTER.
WELD DEPOSITION. BUILD-UP AREA 1.5 X 1.5 X 1.5 M

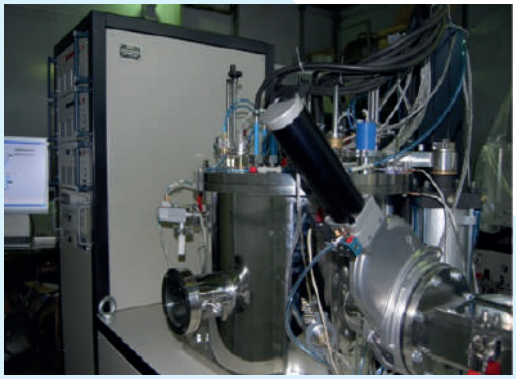
VACUUM ELECTRON BEAM 3D PRINTER.
POWDER SINTERING. BUILD-UP AREA – 300 MM
IN DIAMETER, HEIGHT 400 MM



SPACE SIMULATION FOR ROCKET AND SATELLITE PRODUCT TESTING

OPTICS

- Application of anti-reflective coatings
- Application of highly reflective coatings
- Application of beam-splitting coatings
- Application of filter coatings
- Application of DLC (diamond-like coatings)
- Application of LVF (linear variable filters)
- Application of hydrophobic and oleophobic coatings
- Application of energy-saving coatings (IR filters)
- Application of self-darkening coatings
- Application of reflective coatings (mirrors, headlight reflectors)
- Application of decorative coatings (stained glass)
- Plasma polishing of optical materials (RMS up to 1Å)
- Plasma-chemical etching to generate anisotropic structures on the surface of optical materials (diffraction gratings)
- Vacuum growth of single crystals of optical materials (zone melting, Czochralski method)



ANTI-ICING AND FILTER
FOR AIRCRAFT GLASS

ELECTRON-BEAM DEPOSITION
OF VARIOUS COATINGS

ELECTRONICS

- Application of conductive, resistive, dielectric and semiconductor coatings
- Application of multilayer thin films
- Application of waveguide coatings
  Ion doping and implantation of semiconductor materials
- Plasma etching of microelectronic film structures (isotropic and anisotropic etching – Bosch process)
- Plasma treatment and adhesion activation of component and product surfaces for various manufacturing operations (gluing, painting, etc.)
- Growth of single crystals for semiconductor materials
- Vacuum soldering

NEUTRON FLUX SENSORS PRODUCTION

CONTACT COATINGS FOR PELTIER MODULES (THERMOELECTRIC GENERATORS)

ATOMIC LAYER DEPOSITION (ALD)

ION BEAM DEPOSITION

OXIDE COATINGS FOR HTSS

METALLURGY AND GENERAL ENGINEERING

- Vacuum melting (induction, muffle) for producing superalloys and ultra-pure alloys and metals with the option of adding nanoscale modifiers and ultrasonic processing
- Replacement of galvanic coatings
- Vacuum atomization and spheroidization of powder metals and alloys for powder metallurgy and additive manufacturing technologies
- Growth of single-crystal structures
- Application of hardening, heat-barrier, and wear-resistant coatings to metal-cutting and other tools (drills, chisels, milling cutters, saws, etc.)
- Application of hardening, tribotechnical and thermal-barrier coatings on machine-building equipment (dies, molds, etc.)

HARDENING OF METAL-CUTTING TOOLS AND DIES

SINGLE CRYSTALS OF HIGH-MELTING-POINT METALS

- Application of hardening, wear-resistant, anti-corrosion tribotechnical and thermal-barrier coatings to machine parts (shafts, plain bearings, gears, rollers, etc.)
- Vacuum compression impregnation of porous castings
- Vacuum heat treatment of parts and products for the mechanical engineering industry
- Plasma treatment and adhesion activation of parts and product surfaces for various manufacturing operations (gluing, painting, etc.)
- Gas-phase deposition of ultra-dense and ultra-pure metals and alloys (CVD technology)
- Application of hardening, tribotechnical and thermal barrier coatings on machine-building equipment (dies, molds, etc.)

HEAT TREATMENT OF COMPONENTS. THERMAL SHOCK TESTING

VACUUM INDUCTION CASTING

LIGHT INDUSTRY, MEDICINE, FOOD PRODUCTS, WOODWORKING AND CONSUMER GOODS

- Deposition of decorative and decorative-protective coatings on components of garments and leather goods (zippers, buttons, rivets and other accessories), as well as on furniture hardware, tableware, cutlery and building materials.

- Deposition of functional coatings (electrically conductive, electric-heating, barrier, strengthening, corrosion-resistant, antibacterial, etc.) on light-industry products, medical implants, pins, surgical and medical instruments, dental prostheses and implants in order to create “smart materials of the future” and to extend their service life and enhance safety.

- Plasma treatment and surface activation of light- and textile-industry products (fibres, yarns, woven and non-woven materials, leather and fur, membrane materials) to improve strength, dyeability, resistance to atmospheric exposure and other performance characteristics.

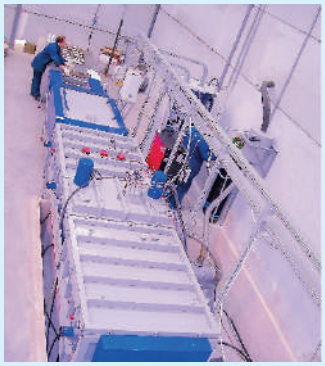
- Plasma sterilization of medical products, instruments and components.

- Vacuum sublimation (freeze-drying) of food products, pharmaceuticals and dietary supplements.

- Vacuum drying and vacuum thermo-modification of wood.

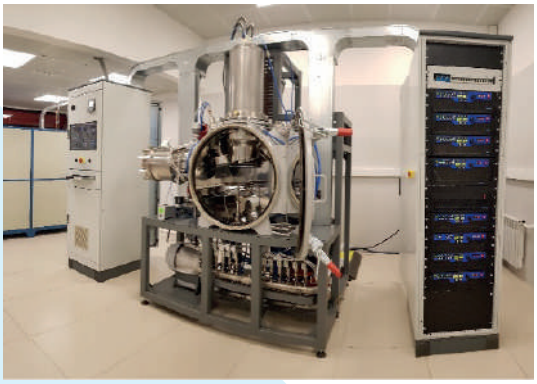
SUBLIMATION OF MEDICINES
AND DIETARY SUPPLEMENTS

PROTECTIVE COATINGS
FOR MEDICAL RADIOISOTOPES



DECORATIVE TILE COATINGS

SUBLIMATION OF FOOD PRODUCTS



FRACTAL COATINGS
FOR CARDIAC PACEMAKER ELECTRODES

BIOCOMPATIBLE IMPLANT COATINGS

FERRY VATT LLC designs and manufactures vacuum equipment for a wide range of scientific and industrial applications.

The company was founded in 1991 by key experts of the Kazan Scientific and Production Association of Vacuum Engineering and continues to build on over half a century of Russian industry experience. Today, the company owns in-house production facilities, research center and design bureau enabling it to complete unprecedented tasks quickly. Our employees are graduates of leading Russian departments of vacuum and plasma engineering, including Bauman Moscow State Technical University and Kazan National Research Technical University. Our team's professionalism has been confirmed by numerous research articles, diplomas and awards, as well as by the choice of our Customers – state corporations, universities, research centers, and production companies.

We approach each task individually, rather than forcing solutions into standard templates, which is why our Customers choose us.

We are always open to growing together with you!

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YouTube

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MADE IN
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