ferry vatt

VACUUM UNIVERSE

Ferry Vatt Group of Companies

Strategic Technology Partner for Vision 2030

Advanced Vacuum Technologies • Localization •
Technology Transfer • High-Value Industrialization

About our company

VACUUM UNIVERSE

About us:

- Ferry Vatt is a private high-tech engineering company based in Kazan, Russia (est. 1991)
- We specialize in advanced vacuum systems, surface engineering, composite technologies and flexible electronics Key facts:
- Full-cycle production facilities, R&D laboratories and in-house design bureau
- Over 175 completed projects across aerospace, energy, nuclear, automotive and electronics sectors

We enable:

- Industrial diversification
- Localization of critical technologies
- Advanced manufacturing and materials development
- Knowledge transfer and human capital development

Core Competencies:

- Thin-film coatings
- Plasma surface treatment
- Composite molding technologies
- Vacuum thermal processing
- Vacuum testing
- Specialized vacuum solutions

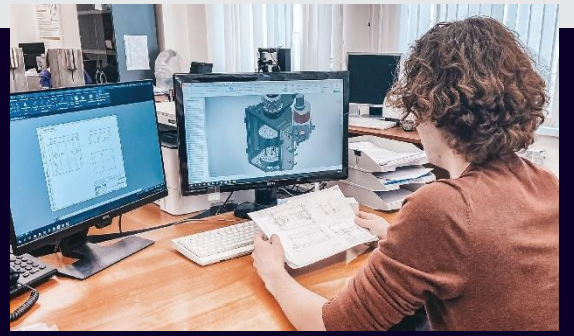
Group of Companies

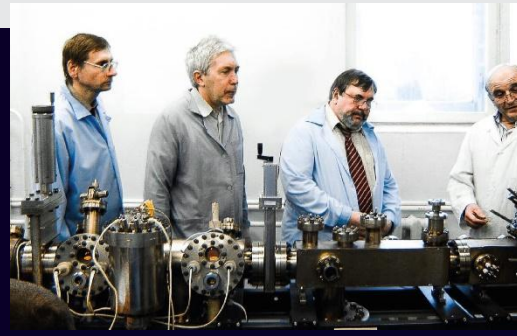
VACUUM UNIVERSE

FERRY VATT LLC	Kazan	since 1991	Head company. Manufacturing area: 2,000 m²

FERRY VATT Manufacturing LLC	Innopolis Special economical zone	since 2015	Subsidiary company. New 7,500 m² production facility under construction (2024–2027).

Laboratory 23 LLC	Tomsk	since 1992	Subsidiary company. R&D center and Eastern regional office.

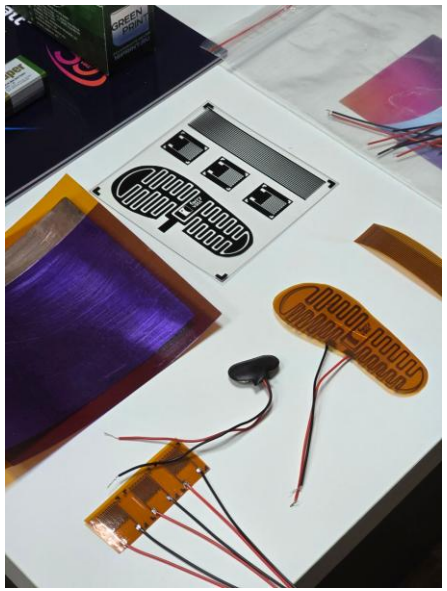




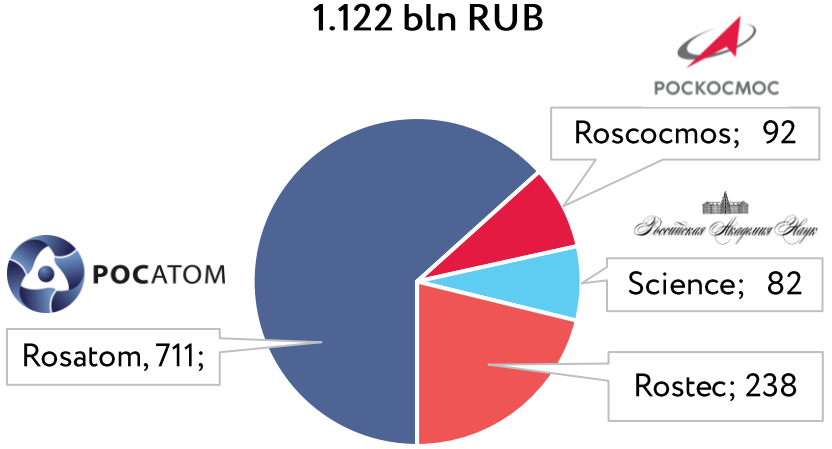
High-Impact Technology Portfolio

Our technologies support key transformation goals:

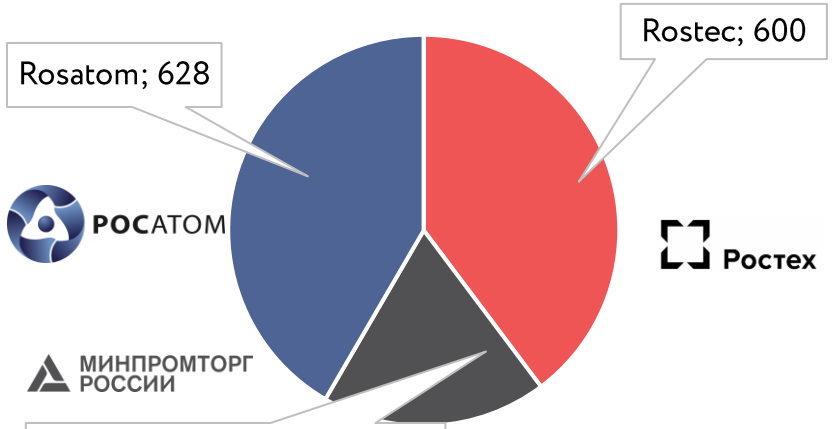
- Vacuum infusion of the MS-21 "Black Wing" and composite components for civil aviation engines.
- Electrically heated coatings for aircraft glazing (MS-21, SSJ, Tu-214).
- Protective coatings for nuclear fuel cladding under the *Tolerant Fuel* program.
- A full equipment complex for production and testing of space nuclear power systems (25+ units).
- Automotive coating technologies replacing imported high-tech solutions (piston rings, liners, etc.).
- Russia's first vacuum electron-beam 3D printers for high-strength metal parts (cladding and powder sintering).
- A full-cycle flexible electronics production line (150 μm resolution) for flex circuits, sensors, smart textiles, RFID and more, implemented under Subsidy Program No. 2136 of the Ministry of Industry and Trade.



Completed contracts (2021- 2024 гг.), 1.122 bln RUB



Contracts in execution, 1.509 bln RUB



Indicators and targets

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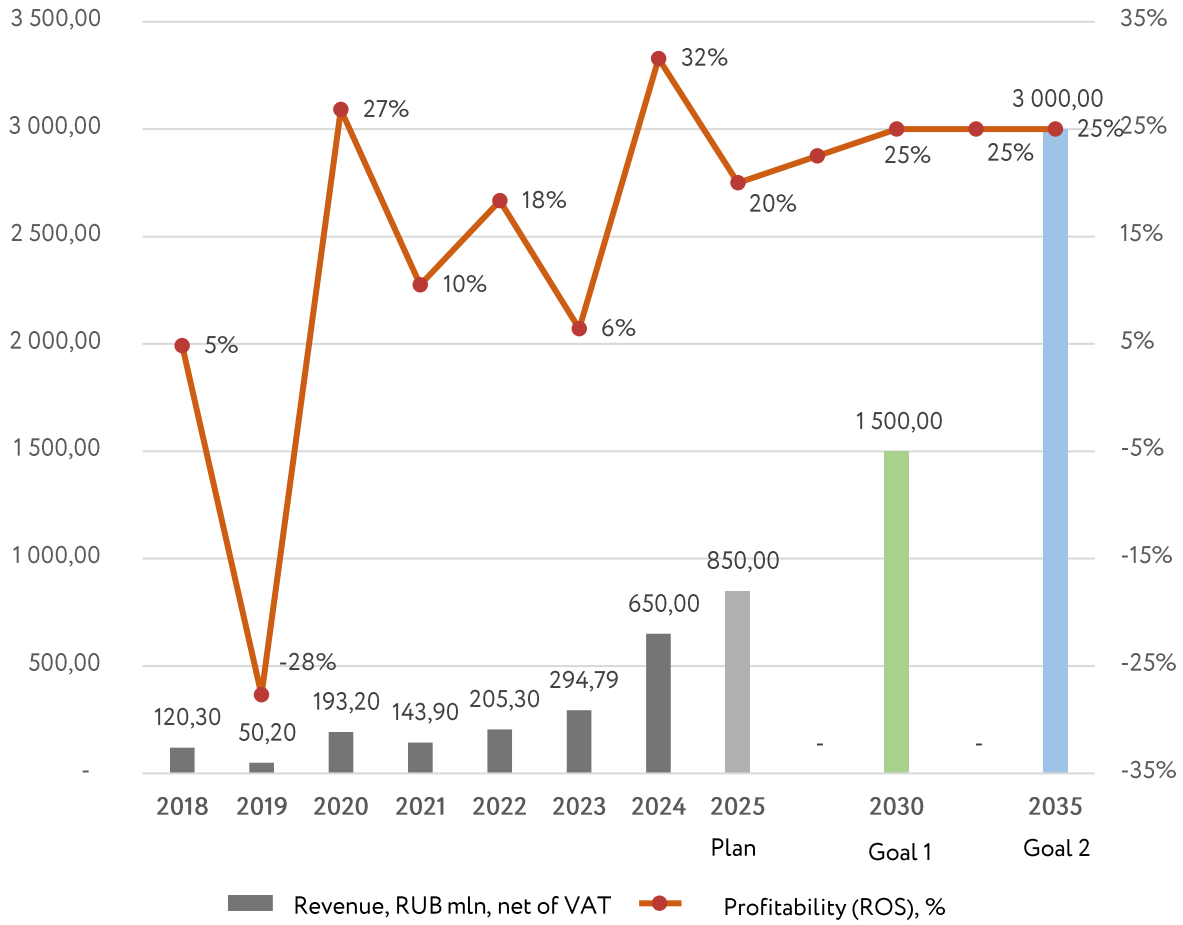
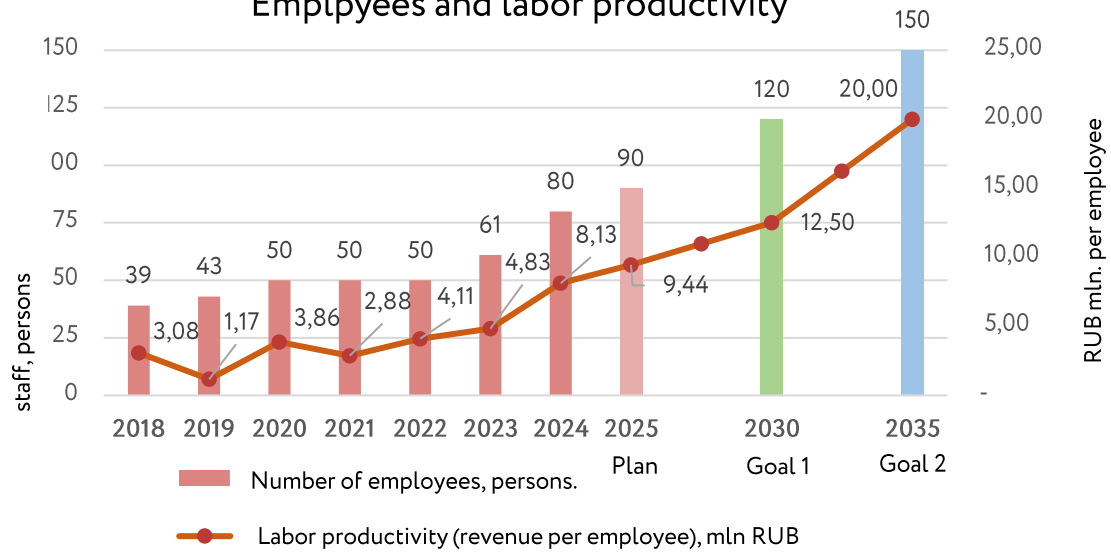
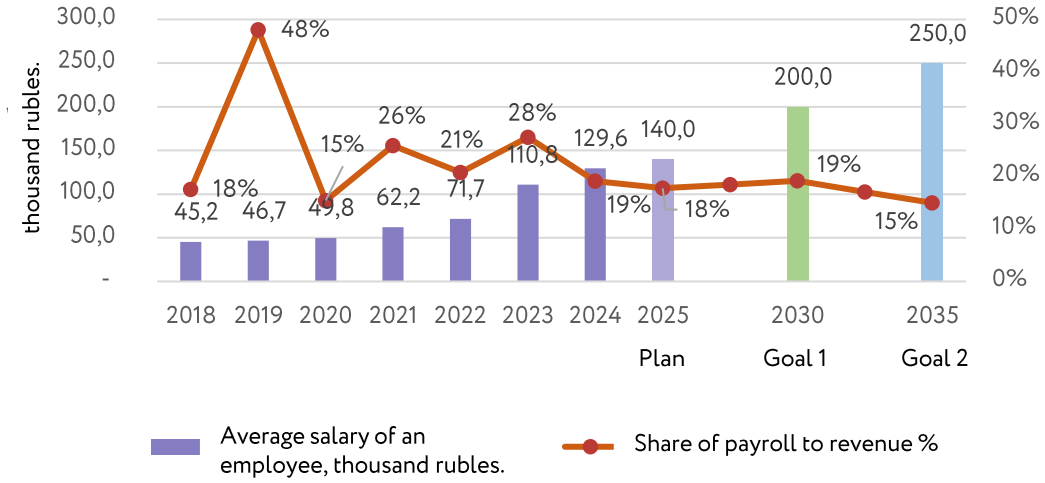
Profitability (ROS) and revenue growth



Emplpyees and labor productivity

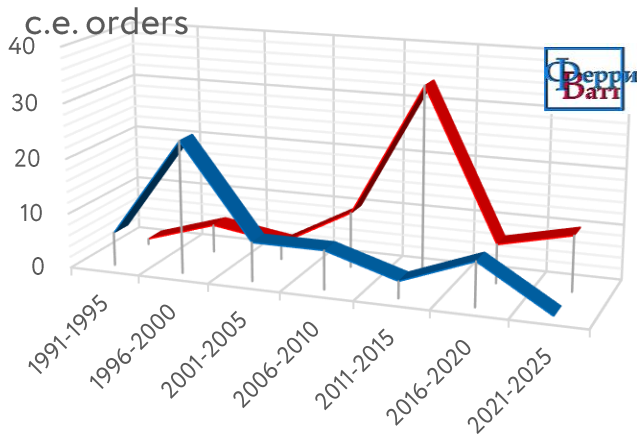


Average salary per Revenue

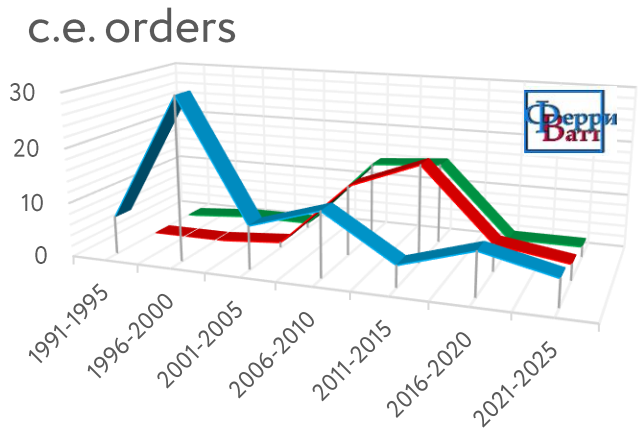


Market Overview

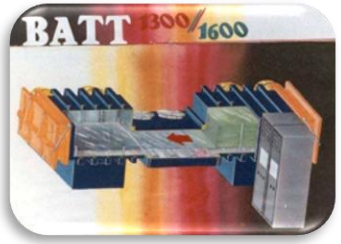
Structure of the WTT market divided into private and public customer*



Structure of the HTT market with division of equipment by purpose into civilian, specialty and research and development equipment*



Vacuum engineering is a fundamental technology — and in some industries, the only viable one — for microelectronics, automotive, aerospace, energy, nuclear and space applications



- Imports of vacuum equipment in 2021 amounted to 33 billion rubles, while the output of domestic equipment amounted to 3 billion rubles. [1]
- There are no high-tech mass-use products with a high share of VTT utilization in the Russian Federation.
- Since 1998, the Russian market has been dominated by R&D-driven, one-off custom developments. Since 2020, a new “window of opportunity” has opened for serial high-tech products [3].
- The global WTT market is the main driver of economic growth [2].
- If the products of special and strategic purposes have some protection in the face of the state, domestic high-tech products of mass consumption can develop only under the condition of consolidation of manufacturers and state support. [3]

* according to the data of the portfolio of Orders of CJSC/FERRY VATT LLC in the period 1991-2021

Strategy

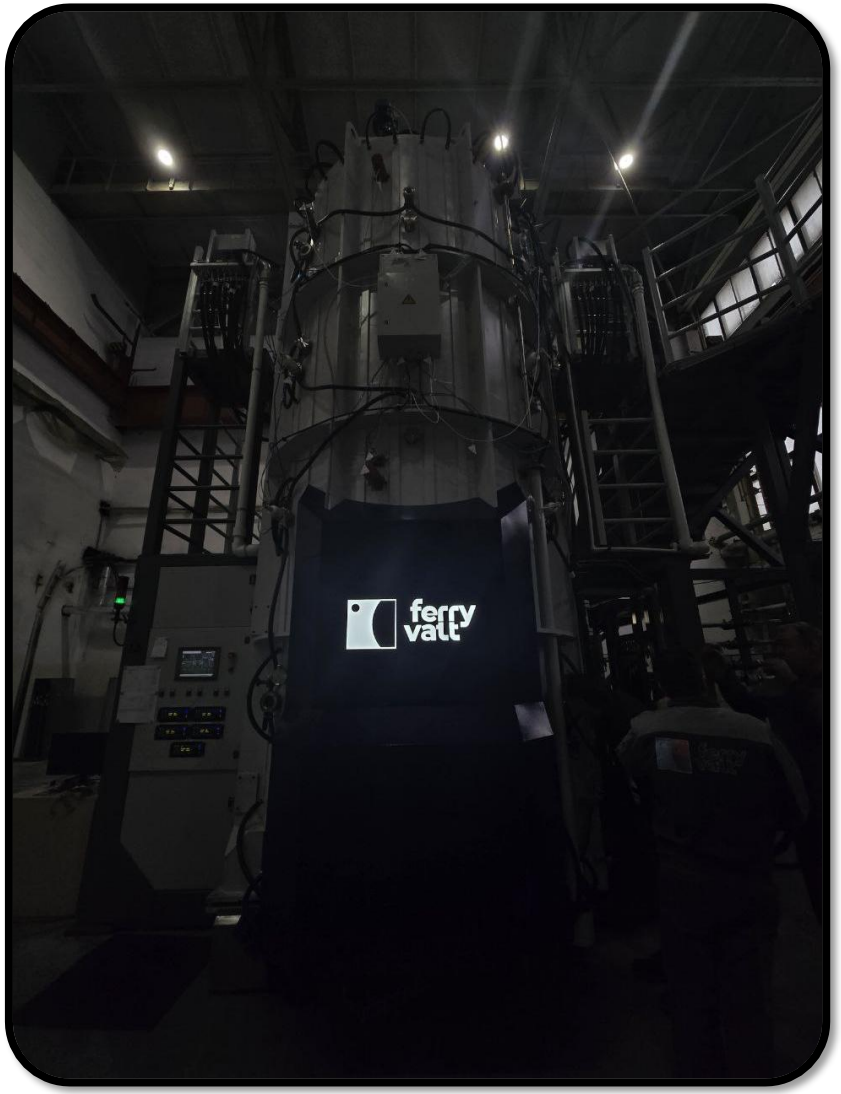
2030 Strategic Priorities:

- Scale R&D solutions into serial production
- Increase productivity;
- Reduce operational costs and production losses;
- Improve production efficiency and lead times;
- Expand manufacturing

2035 Vision:

- Reduce dependency on state-funded R&D
- Develop breakthrough technologies
- Build vertically integrated group
- Prepare for IPO and global expansion

Goal	2024	Goal 2030	Goal 2035
Revenue from sales, thousand rubles	650 000	1 500 000	3 000 000
Return on sales, %	20%*	25%	25%
Labor productivity, revenue, mln RUB/employee	8,13	12,5	20
Staff, persons	80	120	150



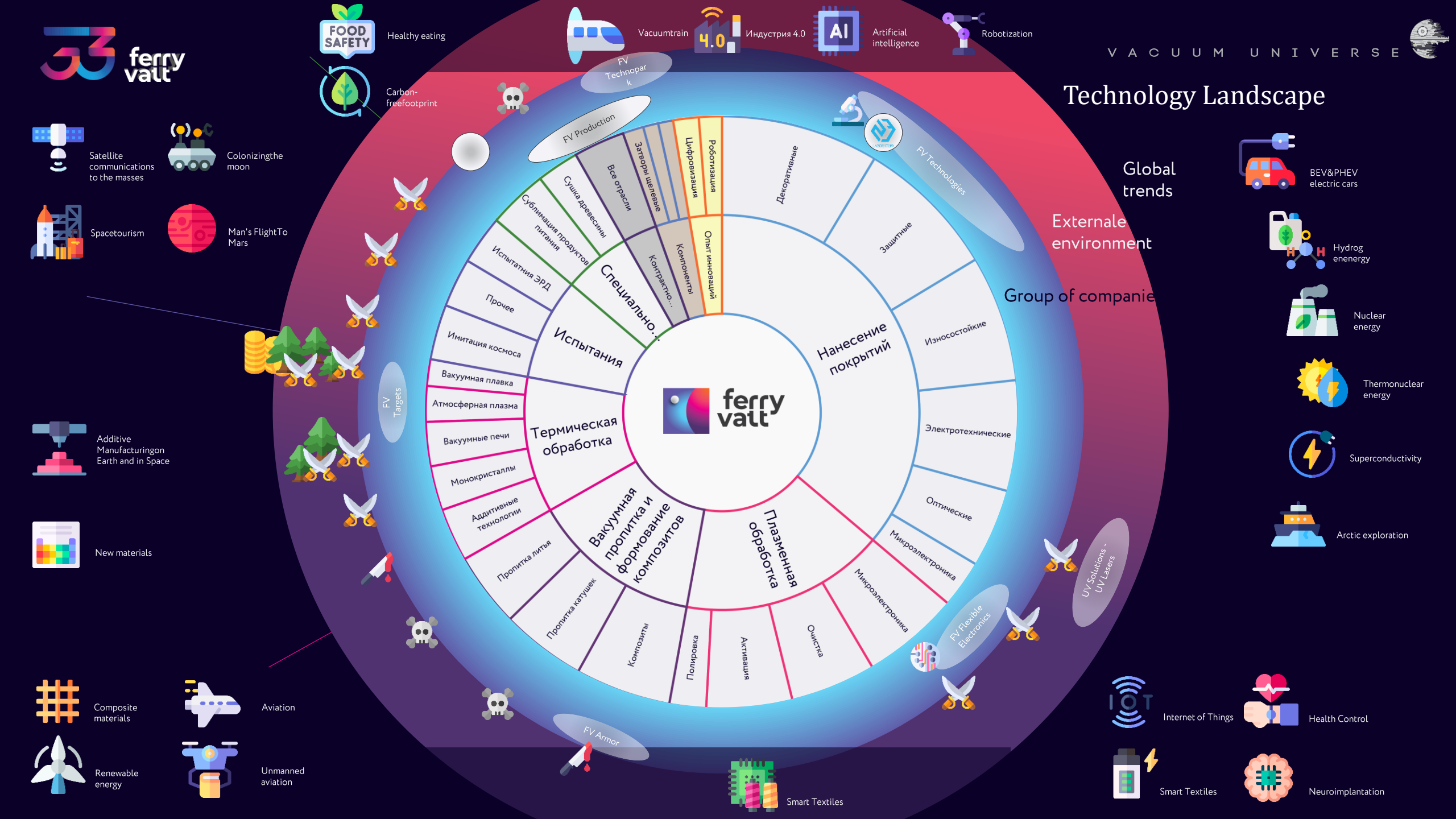
Focus Areas Vision 2030

Why Our Technologies Matter for Saudi Arabia:

Saudi Vision 2030 prioritizes the creation of local high-value industries in aerospace, energy, mobility, defense and advanced materials.

Ferry Vatt provides enabling technologies for:
- Space & nuclear research
- Aviation & composite manufacturing
- Renewable energy & hydrogen ecosystem
- Automotive electrification
- IoT, sensors and smart fabrics

We offer full technology transfer and local production capability.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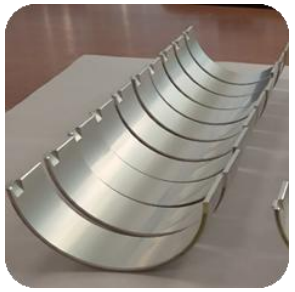
Technology Landscape
Global trends
Externale environment
Group of companie
Healthy eating
Carbon-freefootprint
Vacuumtrain
Индустрия 4.0
Artificial intelligence
Robotization
FV Technopark
FV Production
FV Technologies
FV Targets
FV Armor
FV Flexible Electronics
UV Solutions - UV Lasers
Satellite communications to the masses
Colonizingthe moon
Spacetourism
Man's FlightTo Mars
Additive Manufacturingon Earth and in Space
New materials
Composite materials
Aviation
Renewable energy
Unmanned aviation
Smart Textiles
BEV&PHEV electric cars
Hydrog enenergy
Nuclear energy
Thermonuclear energy
Superconductivity
Arctic exploration
Internet of Things
Health Control
Smart Textiles
Neuroimplantation
Нанесение покрытий
Декоративные
Защитные
Износостойкие
Электротехнические
Оптические
Микроэлектроника
Плазменная обработка
Очистка
Активация
Полировка
Композиты
Вакуумная пропитка и формование композитов
Пропитка катушек
Пропитка литья
Термическая обработка
Аддитивные технологии
Монокристаллы
Вакуумные печи
Атмосферная плазма
Вакуумная плавка
Испытания
Имитация космоса
Прочее
Испытатния ЭРД
Специально...
Сублимация продуктов питания
Сушка древесины
Все отрасли
Затворы шлелевые
Контрактно...
Компоненты
Цифровизация
Роботизация
Опыт инноваций

Wear-resistant coatings




Purpose :

Extend lifespan of components under harsh conditions

Applications:

- Elements of tubing and compression equipment
- Guideways, shafts, plain bearings
- Drilling and auxiliary equipment rubbing elements
- Parts for H_2S, CO_2, seawater applications.

Benefits:

- Extended overhaul intervals
- Corrosion, friction and thermal shock resistance
- Reduced failures and downtime
- Reduced service and parts replacement costs
- Stable operation under extreme conditions

What we offer:

- Contract coating services for customer components
- Custom selection of coating compositions for specific operating conditions
- R&D tailored to your specific requirements
- Design and delivery of turnkey equipment
- Audit of current solutions and feasibility study of the transition to coatings

Flexible electronics

Purpose:

For compact, lightweight and reliable sensor and conductor solutions adapted to curved surfaces, vibration and limited installation space.

Applications:

- Pressure, temperature, strain and gas sensors
- Flexible cables for car electronics
- Heaters (steering wheels, mirrors, seats, HUD-glasses)
- Embedded electronics for interior and exterior

Benefits:

- Reduced weight and overall dimensions
- Increased reliability due to absence of soldering and moving joints
- Stability to deformations and vibrations
- Integration of electronics into structural elements
- Possibility of rapid prototyping and small-scale production

What we offer:

We own the technology of flexible electronics production and offer a set of equipment for the full cycle: from thin-film coating to finished products.

Flexible electronics

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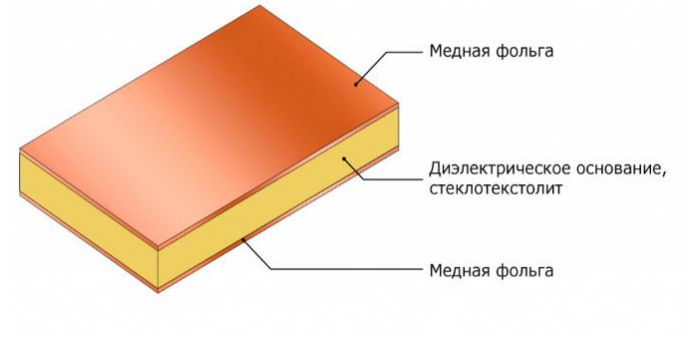
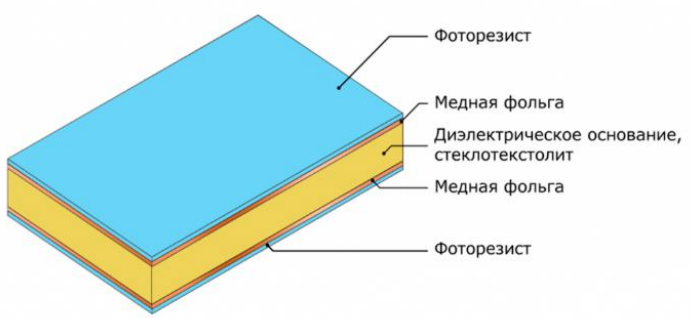
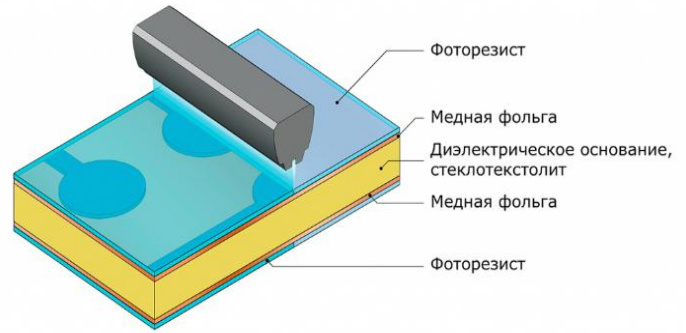
Our technology:



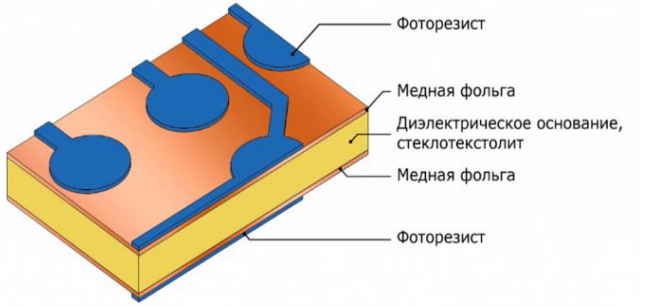
Application of the resistive layer



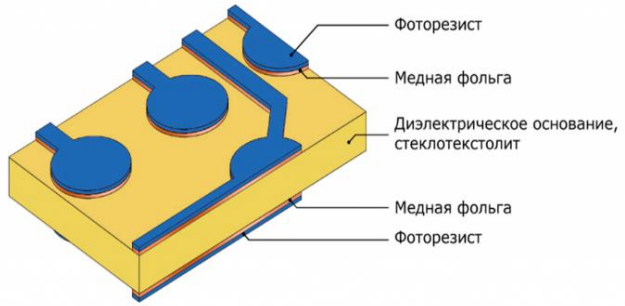
Photoresist lamination



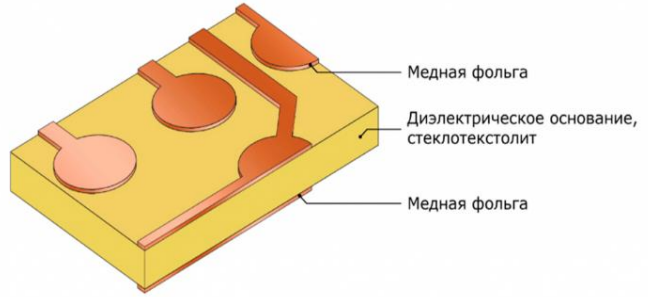
Photoresist exposure



Photoresist development



Copper etching



Removal of photoresist

Vacuum additive cladding.

Purpose:

Vacuum surfacing is an additive process in which metal is applied layer by layer to worn or critical areas of a part. It is used to restore, reinforce and locally modify surface properties.

Application in transportation and energy:

- Pressure, temperature, strain and gas sensors
- Flexible cables for car electronics
- Heaters (steering wheels, mirrors, seats, HUD-glasses)
- Embedded electronics for interior and exterior

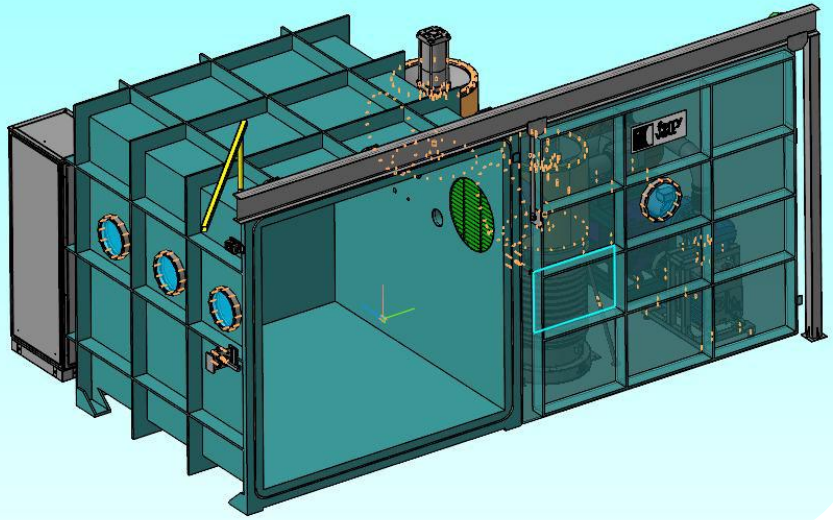
Why the vacuum is important:

- No Oxidation during application
- Pure layer metallurgy
- Improved adhesion due to plasma preparation
- Minimal workpiece deformation due to local heating

Benefits:

- Restoration of high-value components
- Increased service life
- Reduced need for expensive billets
- Ability to work with dissimilar metals

Experience:



Coatings for glazing

Purpose:

To create functional glazing with electric heating, solar protection and improved thermal insulation.

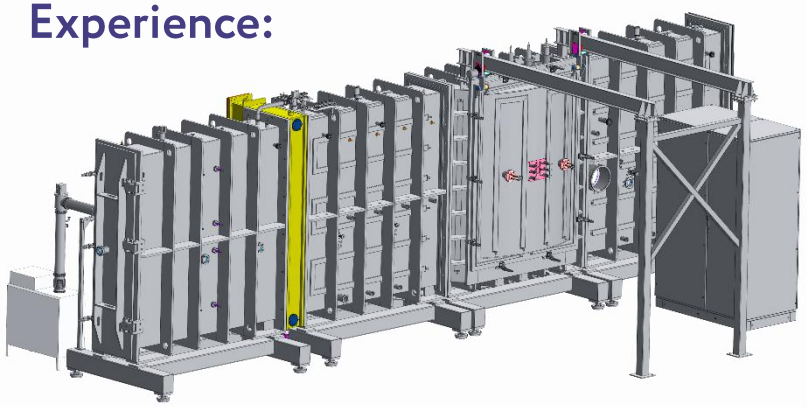
Benefits:

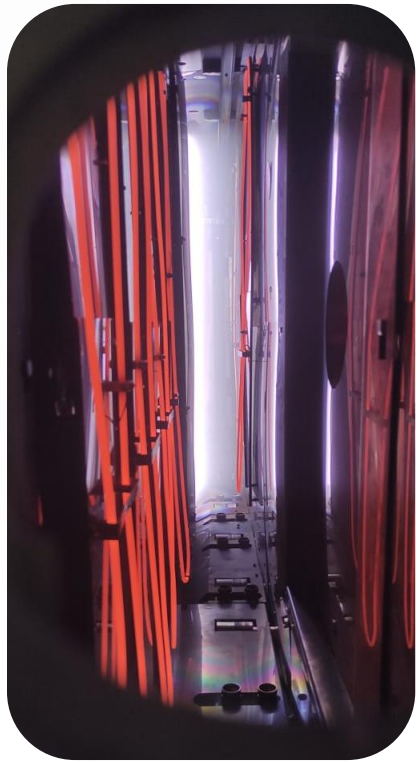
- Transparency in the presence of conductivity (ITO)
- Reduced energy costs for heating and air conditioning
- Increased operating comfort and visibility
- Aesthetics without visible heating elements

What we offer:

- Application of transparent conductive coatings (ITO and analogues)
- Development of solutions for specific climatic and project tasks
- Supply of equipment and start-up of coating line

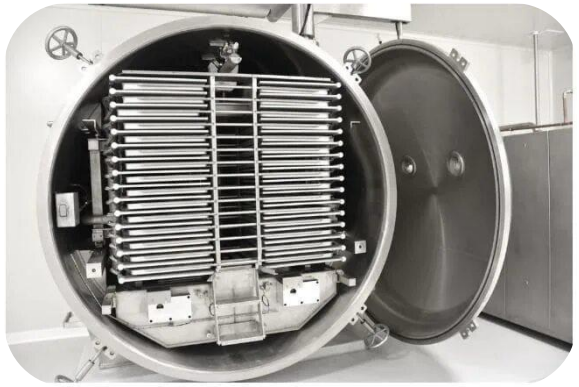
Experience:





Freeze Drying

Experience:



Purpose:

Freeze-drying is a highly efficient solution for producing long-shelf-life food products. Vacuum dehydration preserves flavor, structure and nutrients without preservatives or refrigeration.

Application:

- Processing of vegetables, berries, fruits, mushrooms
- Drying of meat and fish products
- Space and military nutrition,
- IRP Long-term storage rations for EMERCOM and tourists

Benefits:

- Storage without refrigeration 1-3 years
- High rehydration efficiency
- Minimal weight and volume during transportation
- Possibility of packaging in hermetically sealed ICT/PPIs
- Reduced transportation costs

Relevance:

- Growing demand for chemical-free long-life storage products
- Import substitution in the emergency food segment
- Export potential to Asia and Middle East countries

Composite molding equipment

Purpose:

Creation of parts from polymer composites with high strength and low weight. The solutions are relevant for the transportation, aviation and energy industries, as well as for the production of special purpose equipment.

Application:

- Aviation: panels, brackets, interior elements
- Automotive: body elements, fenders, hoods
- Power and mechanical engineering: covers, supports, shells

What we offer:

- A complete integrated equipment suite for composite molding (molds, pumps, heating systems, tooling)
- Heat treatment and curing chambers
- Automated process control systems
- Technological testing and personnel training

Experience:

- Proprietary line of infusion and RTM units
- Supply to aviation and defense companies
- Design and assembly of chambers from small to industrial scale

Vacuum infusion of the MS-21 Black Wing

Vacuum infusion of PD-35 housing

Partnership

Who we are:

We position ourselves as a competence center for establishing high-tech production facilities based on our proprietary vacuum technologies and engineering solutions.

Why now:

Markets are rapidly evolving toward industrial expansion, economic diversification and adoption of advanced technologies (Vision 2030). This creates favorable conditions for localizing high-value manufacturing.

What we offer:

- Joint development of turnkey projects
- Equipment supply and technology integration
- R&D and pilot production start-up
- Support in localization, personnel training and market introduction

We're open:

- To discuss various forms of cooperation
- **To customize projects to meet regional priorities**
- To create sustainable technology partnerships for the long term

Partnership

Why Our Technologies Matter for Saudi Arabia:

Saudi Vision 2030 prioritizes the creation of local high-value industries in aerospace, energy, mobility, defense and advanced materials.

Ferry Vatt provides enabling technologies for:
- Space & nuclear research
- Aviation & composite manufacturing
- Renewable energy & hydrogen ecosystem
- Automotive electrification
- IoT, sensors and smart fabrics

We offer full technology transfer and local production capability.

Localization & Technology Transfer

We deliver turnkey localization packages:
- Engineering documentation
- Process technology & industrialization
- Full equipment supply & commissioning
- Training of Saudi specialists
- Joint R&D and co-development programs
- Integration into national industrial clusters

Strategic Alignment with Vision 2030:

Our approach directly supports:
- National Industrial Strategy (NIS)
- Local Content Program (LCGPA)
- MOD Defense Localization (50% by 2030)
- Saudi Space Commission (SSC) technology roadmap
- Advanced Manufacturing and Materials Initiative
- NEOM & Red Sea industrial future technologies

Partnership

Proposed Areas of Cooperation

We propose cooperation formats fully aligned with KSA requirements:

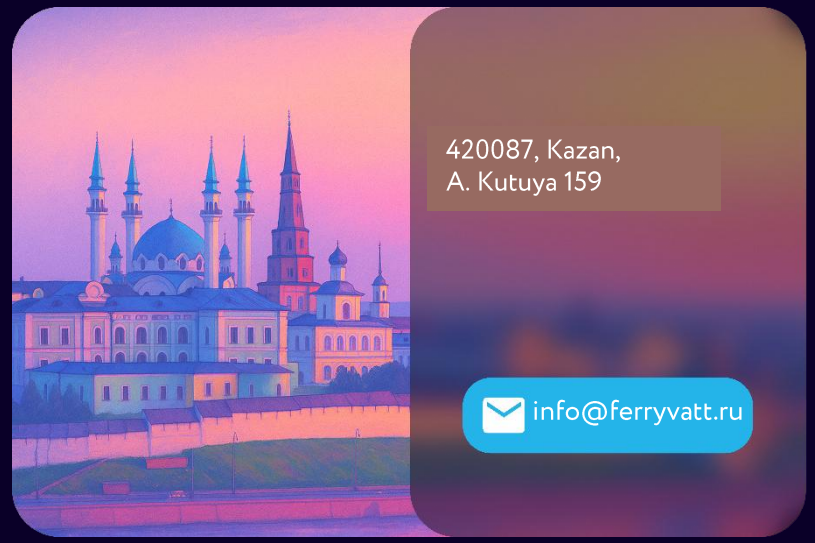
- Local manufacturing of vacuum equipment
- Ready to establish Saudi-located manufacturing
- Joint development centers with Saudi universities
- Technology transfer for composite and coating systems
- Localization of flexible electronics for automotive & defense
- Space & high-energy technology development with SSC

Next Steps

We are ready to:

- Conduct a detailed feasibility study
- Prepare a localization roadmap
- Define JV / co-development structure
- Initiate pilot production and training

We welcome discussion with Vision 2030 stakeholders



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Our Telegram

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