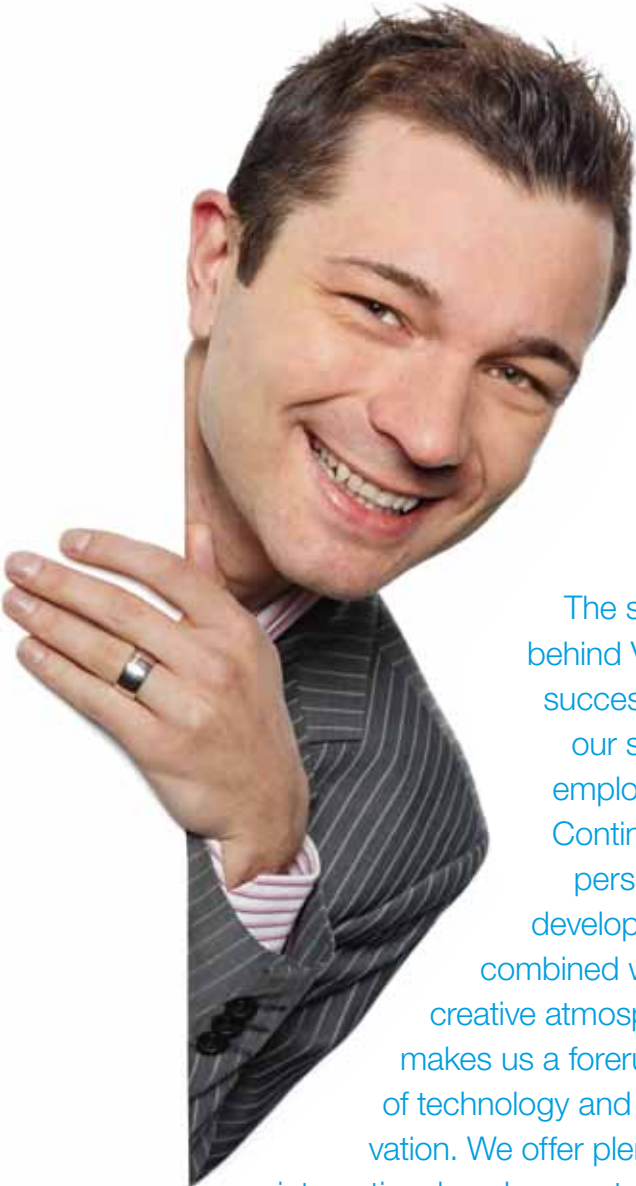




Career **opportunities** in a **global** setting



The secret behind VTT's success are our skilled employees. Continuous personnel development combined with a creative atmosphere makes us a forerunner of technology and innovation. We offer plenty of international work opportunities and encourage employee mobility. VTT is also an excellent environment for anyone pursuing post-graduate studies.

We are looking for

Trainees and thesis workers

We offer challenging tasks

in a wide range of high quality research projects. Working at VTT will provide you an insight into your chosen industry and the world of international research. You can build your career based on your own interests and your competence profile. While completing your Master's thesis you will get the full support of the experts in your research team. The duration of a traineeship typically varies from a few months to a year. VTT will open many doors for your future.

We expect passion

for learning and personal development, and an open-minded attitude towards new technology. You are an active person with good teamwork and communication skills. We appreciate well-performed studies in an applicable field of science, technology, or business.

Welcome to a workplace where you can learn something new every day! The door to your career at the leading edge of technology development is open at

www.vtt.fi/careers

Inspiring prospects for team players



Do you have the spirit to take up the challenge?

Research has truly become a global business. It is foreseeable that in the future only a few leading research organizations will dominate each area of technology or expertise. The remainder will focus on local markets.

VTT has set the target to emerge as a key player from the massive restructuring that sweeps the international R&D market. VTT's strong innovation process and nimble business model provide a firm foundation for developing into one of the world's leading research and innovation organizations in selected world-class spearhead technology areas.

Our main asset for achieving this goal is our professional, skilled staff that shares the passion to always be one step ahead. You might be the right person to further strengthen VTT's brilliant team.

But how could your career path at VTT look like?

Our unique competitiveness is based on the synergy of combining cross-disciplinary technological expertise and business know-how. Therefore we need people with different kinds of professional interests to join our team. As a VTT employee you can develop your own profile in your chosen fields:

- Technological and scientific top expertise
- Customer-oriented solution selling and consultation
- Management of research projects and programmes
- Personnel management and leadership
- Entrepreneurship and commercialization of technology

On the following pages you can find VTT people talking about their work and ambitions. Interested? Don't hesitate to get in touch!



VTT Technical Research Centre of Finland is a globally networked multitechnological contract research organization. VTT provides high-end technology solutions and innovation services. We enhance our customers' competitiveness, thereby creating prerequisites for society's sustainable development, employment, and wellbeing.

Key figures

- 3,000 employees
- Turnover M€ 294 (budget for 2011)
- 6,500 customers worldwide

Staff

- 37 nationalities
- 78% with a university degree of whom 25% doctoral or licentiate degree
- 218 foreign visiting research scientists

Services

- Technology and business foresight
- Strategic research
- Product and service development
- IPR and licensing
- Assessments, testing, certifications and inspections
- Innovation and technology management
- Technology partnership

Examples of results in 2009

- Portfolio of 1,100 patents and patent applications
- Over 1,000 scientific publications
- Partnership in 18 spin-off companies based on VTT's technology

On the map

- Headquartered in the metropolitan area of Helsinki in Otaniemi technology hub. Other main locations in Finland: Oulu, Tampere, Jyväskylä and Turku
- Locations abroad: Silicon Valley (California, USA), Shanghai (China), Tokyo (Japan), St. Petersburg (Russia), Seoul (South Korea), Brussels (Belgium), São Paulo (Brazil)

Career opportunities in a global setting

Editorial: Jenni Junkkala, T-lehti
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Survey shows VTT is the most sought-after employer

If students of Finnish universities of technology were asked to name their dream workplace, they would choose VTT. VTT has emerged as the top choice in same wish lists on previous occasions too. Survey respondents listed the interesting nature of the work and the workplace atmosphere as the primary criteria for employer desirability. The 'Graduates Employer Image 2010' survey was carried out by T-Media.

This is how the respondents characterised VTT as an employer:

"Interesting research at the highest level."

"This could be the job of my dreams."

"The most interesting, one of the most educated organizations in Finland."

"Intriguing!"

"Excellent."

"Many opportunities."

Ten most popular employers among students of Finnish universities of technology

1. VTT
2. Nokia
3. Google
4. Fortum
5. Government
6. Kone
7. ABB
8. IBM
9. Neste Oil
10. Nokia Siemens Networks



A photograph of three people in a modern office setting. On the left, a woman with shoulder-length brown hair, wearing a dark blue cardigan, is smiling. In the center, a woman with short black hair, wearing a black turtleneck and a bright yellow vest, is also smiling. On the right, a man with short brown hair, wearing a dark blue striped shirt, is leaning forward and looking towards the camera. They are all standing behind a dark table. The background shows large windows and a modern building structure.

Erja Turunen:

“In applied materials, we are currently focussing particularly on two things: the opportunities that the new materials bring and sustainable development.”

Tomi Suhonen:

“There is a strong demand for new material development.”

Henna Punkkinen:

“With regard to recycling and utilization, there will be plenty of challenges in the future.”

New materials pave the way to the future

As the world's natural raw materials diminish and the global balance begins to reach a critical point, the significance of eco-efficiency and scarce resources grows ever greater.

The demand for green technologies and expertise in the field of sustainable development is growing fast. Sustainable development is the greatest challenge faced by research communities and VTT has a long tradition in the research of green technologies.

"In applied materials, we are currently focussing particularly on two things: the opportunities that the new materials offer and sustainable development. Price and performance are important factors in new materials, as are other additional benefits such as appearance and processibility. With regard to sustainable development, we are focussing on recyclability, long-term durability of material, availability and new raw materials," tells **Erja Turunen**, VTT's vice president applied materials.

Turunen says that, in addition to the more traditional materials research that forms part of VTT's expertise, they are also studying new types of nanoscale composite structures, coatings and biomaterials.

"We are conducting research into how non-edible organic material from the forest and the fields can be used to make different materials for products. We are for example developing plastic from wood," explains Turunen.

The issue of recycling is one of central importance to the research. More than ever, efforts are being made to discover how already-used material can be used again. Importance of advanced material research is big. The greatest technological innovations have not yet been made, because the materials are not durable enough.

Among the many who work under the guidance of Erja Turunen, with 11 years of VTT background, are two young researchers, **Tomi Suhonen** and **Henna Punkkinen**.

Suhonen's field is the development of coatings for demanding operating conditions, while Punkkinen works with waste materials.

"When I came to VTT in autumn 2008 to write my thesis I didn't guess that I would end up staying here. Meanwhile working here, I realised how important, for example, recycling is and how its importance will only grow in the future. I felt that I was doing work of real significance," says a smiling Punkkinen, who comes from an environmental geology background.

Suhonen, who studied at TKK (Aalto University School of Science and Technology) and is currently writing his dissertation, knew from the beginning that VTT was the place at which he was destined to work.

Cradle to cradle

"Materials research has become ubiquitous. The development of various processes has gone a long way, but now the materials are falling short because they don't stand up in the harsher operating conditions. There is no other solution but to develop new materials," says Suhonen, who works with metals and ceramics. Punkkinen believes that, with regard to recycling and utilization, there will be plenty of challenges in the future.

"Reuse is becoming more and more prominent. It's a kind of 'cradle to cradle' thinking, rather than 'cradle to grave,'" adds Turunen. Regarding the future, she also highlights the imitation of nature in materials.

"Nature is a wonderful and resourceful place where we can find many material solutions that are better than anything we humans could do, such as self healing. If only we knew how to take these solutions and produce them synthetically."

"There's certainly no shortage of work for up-and-coming researchers," she hints.

The spearhead and major innovation programmes

Future-focused challenges central to Finland's economy and society have been chosen as topics for the spearhead and innovation programmes. VTT has the potential for resolving these challenges through finding significant technological solutions and producing genuine innovations. Research impacts are increased by directing innovative research to commercially exploitable focus areas. Customers and research partners are included in the innovation process at an early stage.

Spearhead programmes

- eEngineering – Digital product process as a success factor for technology industries
- Green Solutions for Water and Waste (Start-up in 2011)
- Industrial Biomaterials – Competitive edge from bioeconomy and renewed forest cluster
- Open Smart Spaces - Digital world and ubiquitous computing

Major innovation programmes

- Cognitive Communications (Start-up in 2011)
- Electric Vehicles and Machines (Start-up in 2011)
- Energy Efficiency and New Fuels for Transport
- Fuel Cells
- High-performance Microsystems
- Information and Network Security
- Intelligent Energy Grids (Start-up in 2011)
- Intelligent Transport (Start-up in 2011)
- Low Carbon and Energy Efficient Industry (Start-up in 2011)
- Nutritech
- Technologies for Health

Finding competitiveness in cosmopolitanism

HEIKO RISCHER, 41,

Senior Research Scientist and Team Leader,
Plant Biotechnology

- Studied in Germany: graduated in biology from the University of Hohenheim and defended his thesis on organic chemistry at the University of Würzburg
- Has worked with plant biotechnology at VTT since 2002
- Believes that in both research and industry it is important to seek to work in an international environment

Heiko Rischer arrived in Finland from his native Germany by chance and has thrived here since 2002. Rischer spotted a job advertised by VTT on the internet and wasted no time in turning his plans into action. His impulse turned out to be right because just two months later he found himself up in the chilly climate of the North.

For Rischer, joining VTT was a leap into the unknown. In Germany he had previously only worked in academic spheres.

“Here, we do applied research and work in close collaboration with industry. This fascinating way of working is one of the reasons why I’m still here in Finland,” says Rischer.

At VTT, the German gets to work with the object of his interests: plants. He leads a team of fourteen people, whose combined expertise in plant biotechnology is extensive.

“I think we’re one of VTT’s most cosmopolitan teams. We have a researcher from Iran, a German post-doc researcher, a different exchange researcher from Switzerland every year, and this year we’ll be joined by a Spaniard and an Austrian. People are continually coming and going, though the core members remain. The international environment is great for research.”

“In today’s world, plant biotechnology is a big deal because it is involved in many of the big global issues, such as climate change and energy production.”

Future possibilities at the multitechnological research centre

Having lived and worked in Argentina, **Matias Nyholm** has been able to follow the pulp mill dispute between Argentina and Uruguay, which began in 2005, from a close vantage point. The now resolved dispute and the assignments given to Finnish environmental and energy companies sparked his interest in environmental and energy technologies.

On returning to Finland, Nyholm decided to further his business studies at the University of Jyväskylä. After graduating, he applied for the VTT Innovation Management trainee programme.

“Before applying for the programme, I read a news article about the collaboration between VTT and Kemira combining their expertise on water and about VTT’s work on the development of biomass-based fuel. I thought, ‘My dream job would be working on exactly those kinds of future issues,’” laughs Nyholm during our interview; he progressed from the trainee programme to employment a month ago.

MATIAS NYHOLM, 34,

Business Development Specialist

- Bachelor of Business Administration (International Trade), Tampere University of Applied Sciences and Master of Business Administration, corporate environmental management masters programme, Jyväskylä University
- Has been involved in international business development projects, market coordination in Brazil and other Latin American countries and held sales and marketing roles in the energy industry both within Finland and internationally
- Values his job, in which he gets to work on a wide range of issues and broaden his outlook



“VTT is a multitechnological research centre and getting an overall picture of the organisation from the outside can be difficult. Thanks to the trainee programme, I was given a fantastic opportunity to see everything that VTT has to offer and what kind of research it does,” he continues.

Nyholm now knows that he is in the place where he can really broaden his horizons. At VTT he will be able to commercialise different energy technologies and solutions with world-class experts.

Work of real significance

Elina Vestola, who is currently in Australia working on research into bioleaching, first came to VTT for summer work in 2003. Since then, Vestola and VTT have kept close ties.

“Here at VTT, you can have an influence over what work you do and what kind of research is done. What’s more, I really enjoy getting to know and network with some fantastic people,” tells Vestola.

In 2009, Vestola received recognition for her research when, alongside two colleagues, she won the VTT and Aalto University innovation competition with their idea about using landfills for eco-mining.

Last year, the same idea received an honourable mention from EARTO. In Vestola’s opinion, it is great that the research has caught the attention of wider audience and that the importance of the topic has been given greater recognition.

Bioleaching is a process that has already been in use in the mining industry for 30 years. The process uses microbes to extract metals from ore.

“What’s different about our research is that we don’t use ores, but instead try to treat different types of metal containing waste using the same microbes and the same process. In other words, we’re trying to make use of the exploitable metals lying in the huge waste material flows.



ELINA VESTOLA, 31,

Research Scientist

- Master of Science in Technology in Civil and Environmental Engineering, Aalto University School of Science and Technology
- Currently in Australia writing her thesis on the use of microbes which are involved in the sulphur cycle for biotechnological applications
- Sees work abroad as a wonderful opportunity

Vestola dreams about one day being able to work in the industry, for example, by taking leave of absence. She believes that it would offer a great deal more to the work of a researcher.

VTT’s values

Passion for innovation

- Our top-class and continuously developing knowledge and expertise is the foundation of everything we do. A creative and open-minded culture produces original combinations of competences.

Support and respect to the core

- The wellbeing of our working community is based on trust and respect. We also learn from failure.

Together for the client

- The important work that we do both as individuals and as an organisation is measured by the success of our customers and the development of society. Our work is productive and worthwhile.

One step ahead

- Being in the forefront of development demands the sensitivity to detect changes in the operating environment, the agility to react to them, and the boldness to focus. We take controlled risks when venturing into new areas.



VTT creates **business** from **technology**

VTT is an internationally acknowledged research organisation with an excellent record in cooperating with global market leaders in various businesses. Our expertise in high-end technology combined with an understanding of global business makes us an ideal partner for all research and development needs.

As a workplace VTT provides new challenges and excellent development possibilities. Join VTT for an outlook on technological development and open a gateway to industrial and scientific networks worldwide.

For more information on our career opportunities:

www.vtt.fi

VTT's key technology fields

- Applied materials
- Bio- and chemical processes
- Energy
- Information and communication technologies
- Industrial systems
- Microtechnologies and electronics
- Services and the built environment
- Business research



VTT TECHNICAL RESEARCH CENTRE OF FINLAND