CHALMERS UNIVERSITY OF TECHNOLOGY

LUND UNIVERSITY

LULEÅ UNIVERSITY OF TECHNOLOGY

UPPSALA UNIVERSITET

RI.SE

Teknikföretagen

REGION SKÅNE

IUC Syd

big science sweden

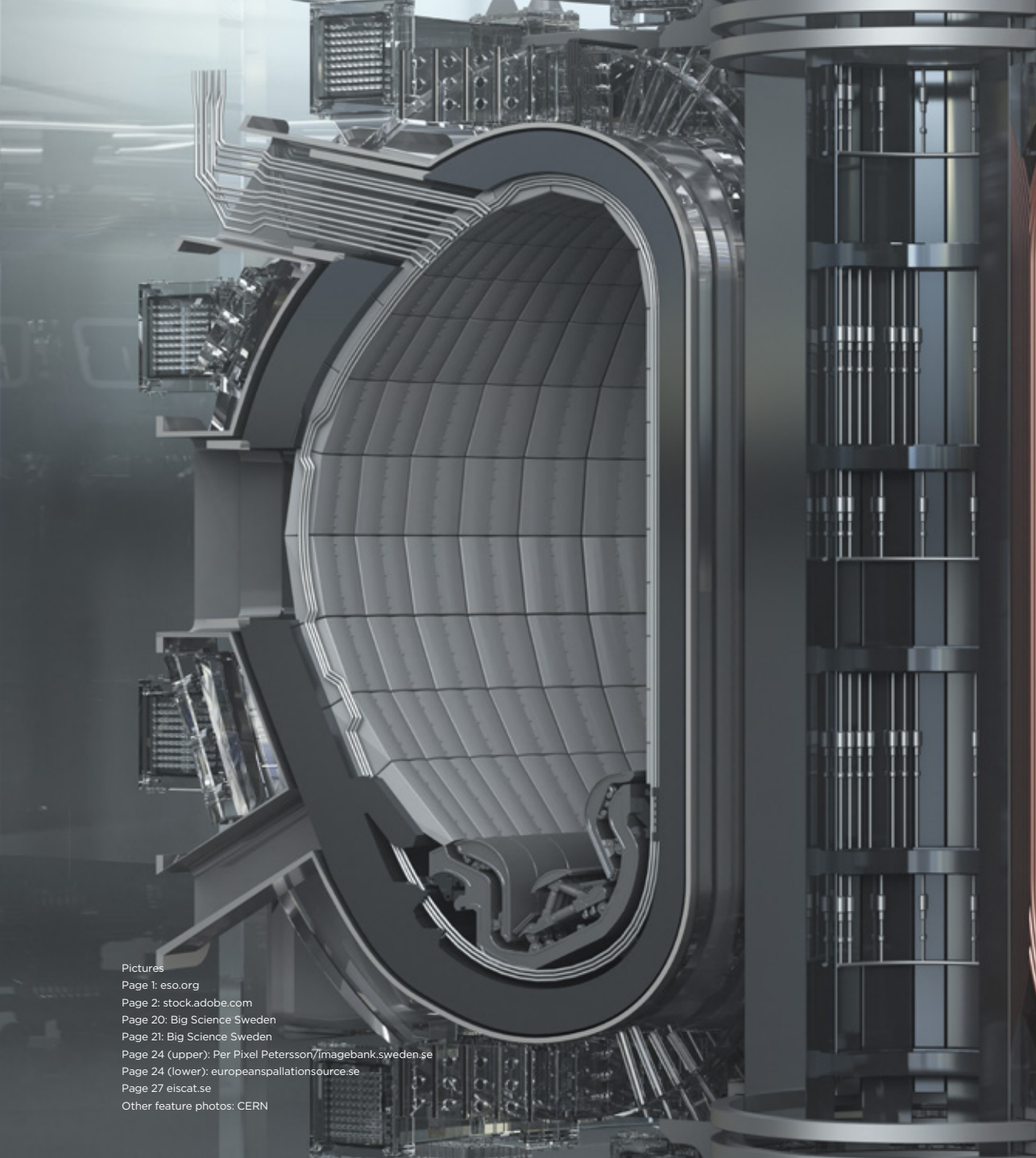
Knowledge, innovation, international collaboration

... AND GOOD BUSINESS FOR SWEDEN

Big Science

Swedish Research Council

VINNOVA Sweden's Innovation Agency



Pictures
Page 1: eso.org
Page 2: stock.adobe.com
Page 20: Big Science Sweden
Page 21: Big Science Sweden
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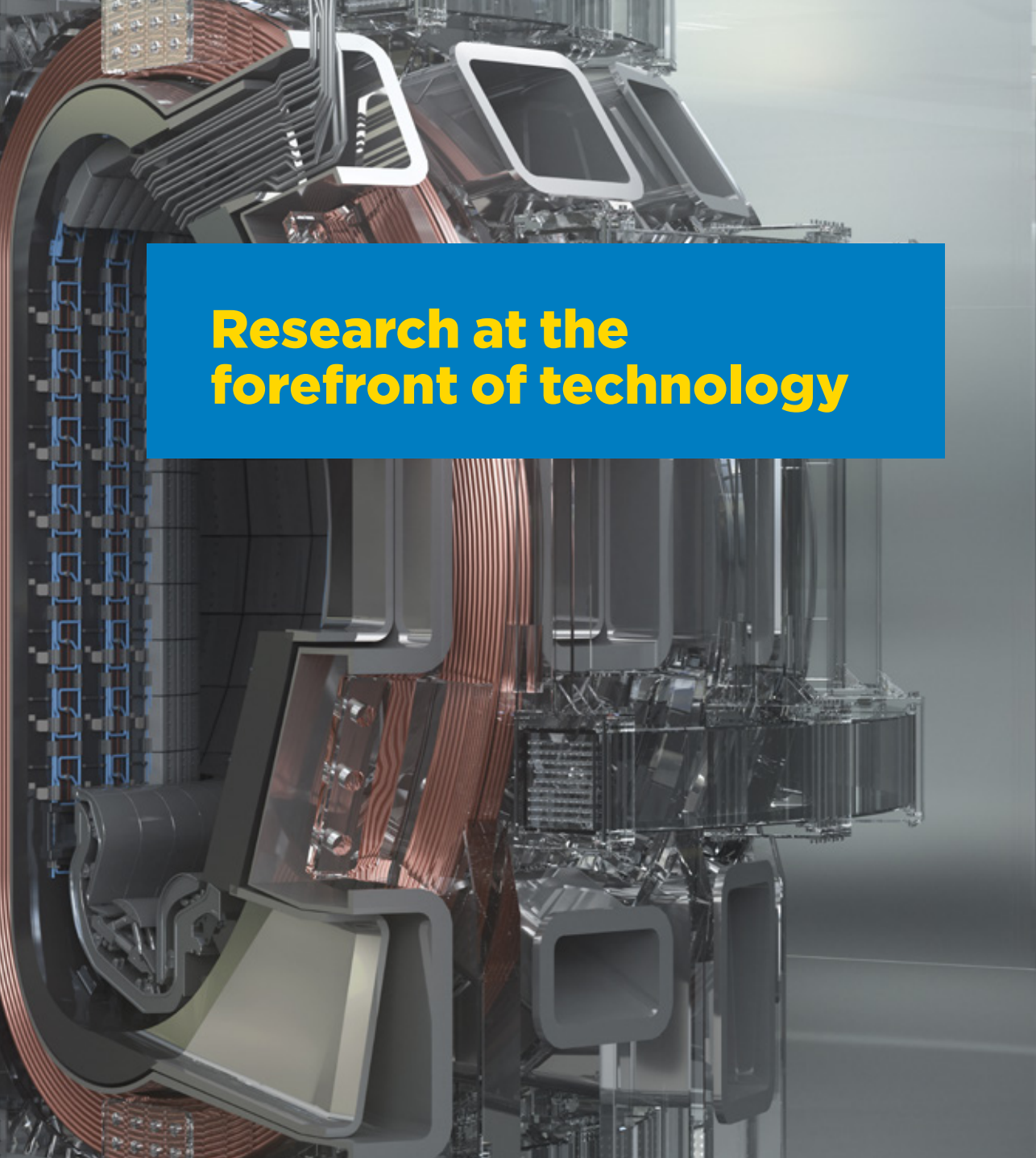


Research at the forefront of technology

Big Science research stimulates innovation and technical development

Big Science Sweden opens doors for industry and academia

... in brief

SWEDEN AND BIG SCIENCE

We are Sweden's Industrial Liaison Office (ILO), with national responsibility for facilitating contacts and building networks with the European research facilities that Sweden is involved in funding.

BIG SCIENCE SWEDEN

Big Science Sweden is the link that builds networks between research organisations and Swedish industry, academia, and research institutes.

KNOWLEDGE TRANSFER

Big Science Sweden creates value for Swedish industry and society by facilitating the transfer of new knowledge, technology, and expertise between Big Science and other areas of application.

OUTREACH

We provide information about career development and openings offered by the Big Science research organisations to Swedish students and professionals.

A NATIONAL TEAM

We work closely with universities and companies all over Sweden, operating from four nodes, with offices in Lund, Uppsala, Göteborg/Borås and Luleå.

SUCCESS STORIES

How some of our member companies have gained a foothold in the Big Science market:

www.bigsciencesweden.se/the-swedish-guide/success-stories

FUNDING BODIES

We are state financed, and our funding bodies are the Swedish Research Council and Vinnova.

OUR PARTNERS

Our partners are Chalmers University of Technology, Lund University, Luleå University of Technology, Uppsala University, RISE, the Association of Swedish Engineering Industries, Industrial development centre IUC Syd, and Region Skåne.


GERMANY/CHILE
ESO
AUSTRALIA/SOUTH AFRICA
SKA
EISCAT
ESS
MAX IV
XFEL
DESY
ISIS
FAIR
CERN
ESRF
ILL
ITER

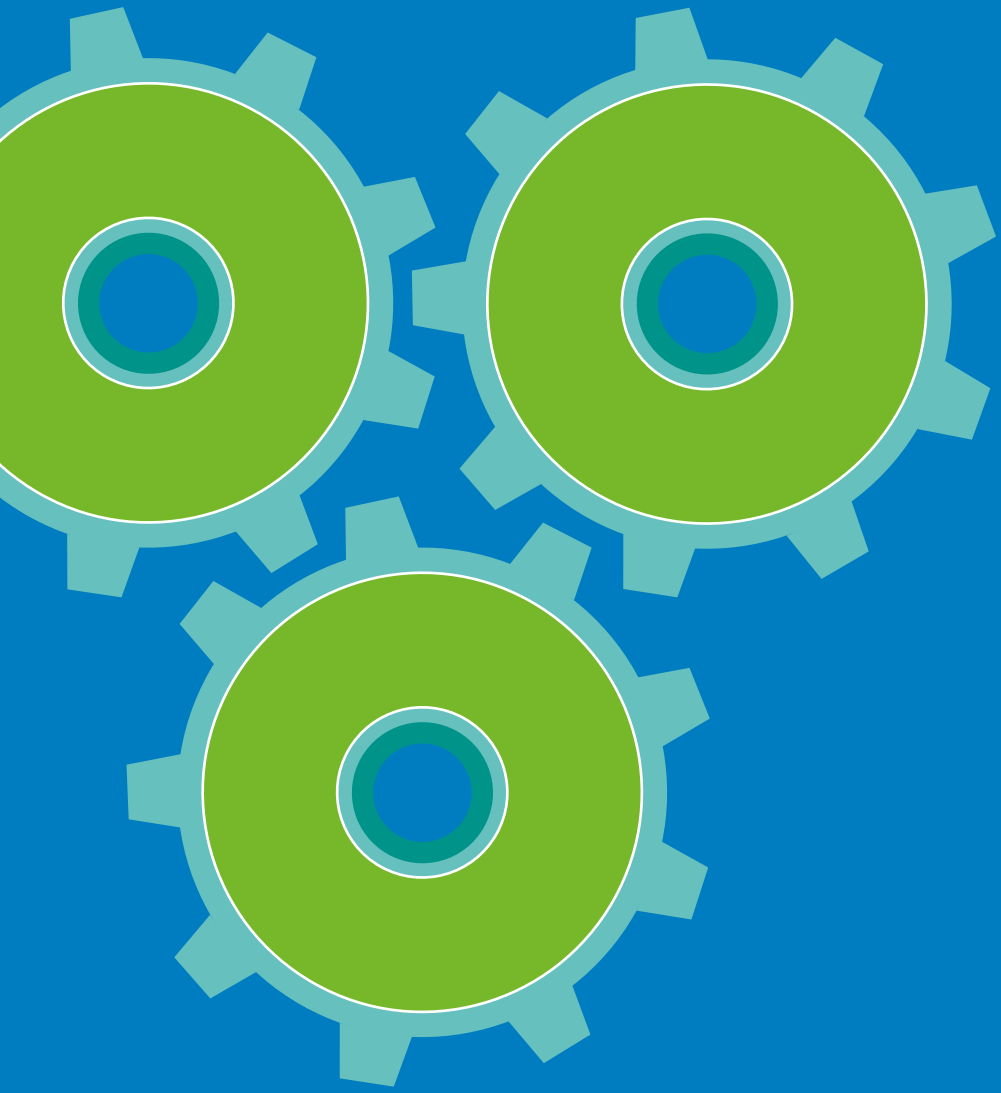
BUSINESS AND INNOVATION

We are the link to Big Science organisations

International Big Science research organisations conduct vital and groundbreaking research. A close relationship with the research facilities gives Sweden access to the absolute latest technological developments in many fields.

Our focus is on high-tech contributions that drive research, innovation, and international collaboration, and that generate good business for Sweden.

Big Science Sweden works to maximise the industrial return from Sweden's investment in Big Science research organisations.



KNOWLEDGE TRANSFER

Big Science as motor

How can industry and society benefit from the pioneering research conducted in the large-scale research facilities, resulting in, for example, new materials, products, and processes? This is one of the issues that the Big Science Sweden Knowledge Transfer Office addresses.

Knowledge transfer concerns flows of knowledge, both downstream, from the research facilities to industry, and upstream, from industry and academia to the research facilities.

www.bigsciencesweden.se/about-us/knowledge-transfer-office-kto

OUTREACH

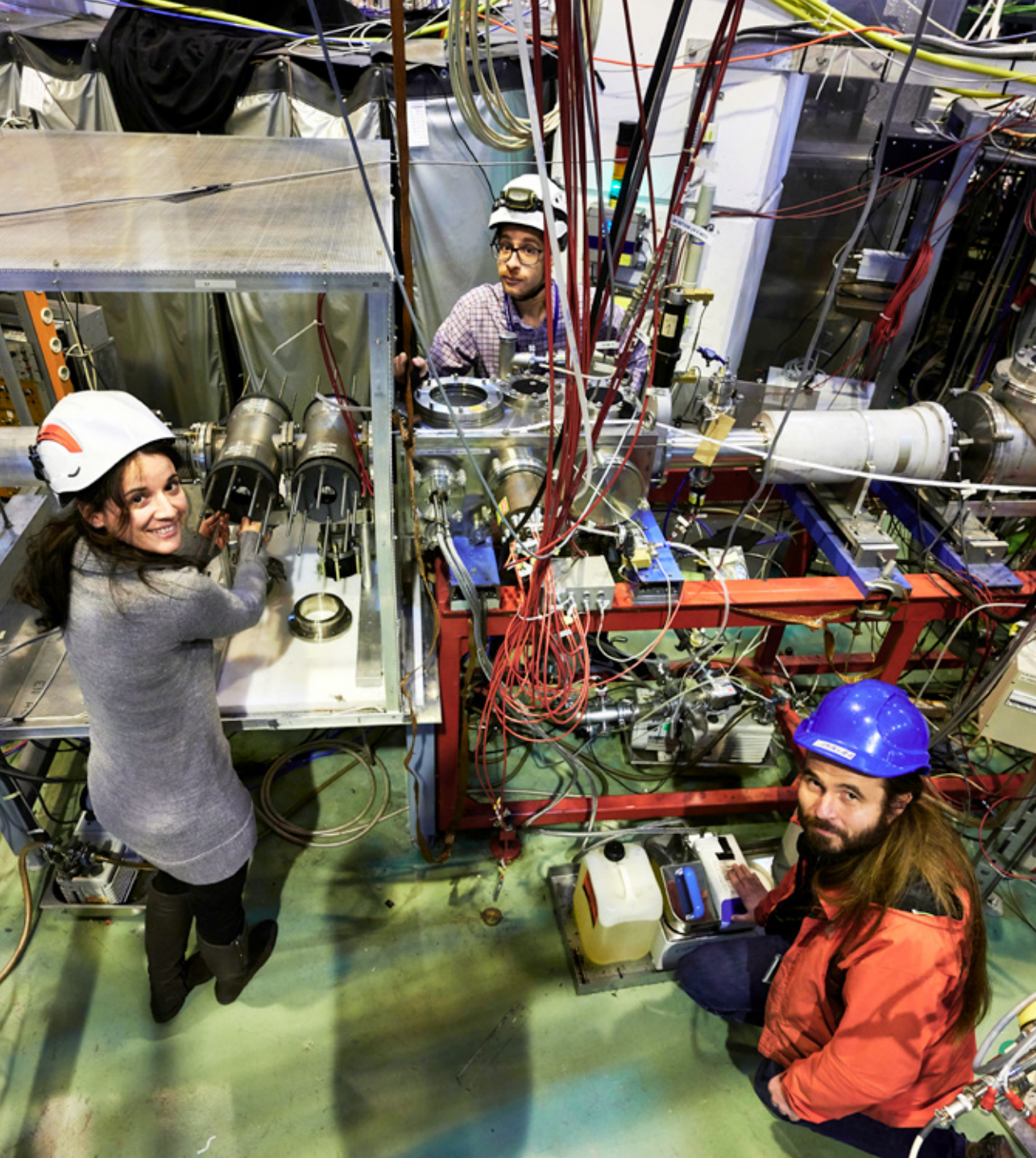
Student programmes and job opportunities in Big Science

Our Outreach work is aimed at arousing interest in the broad range of student programmes and job opportunities available at the Big Science research organisations.

Is it only physicists who work at the research organisations? No, the facilities are also looking for engineers, technicians, project managers, administrative staff, and many other professional groups.

Target groups are both undergraduate and postgraduate students, and professionals with experience who are ready to take on new challenges.

www.bigsciencecareer.se



Industrial Liaison Office

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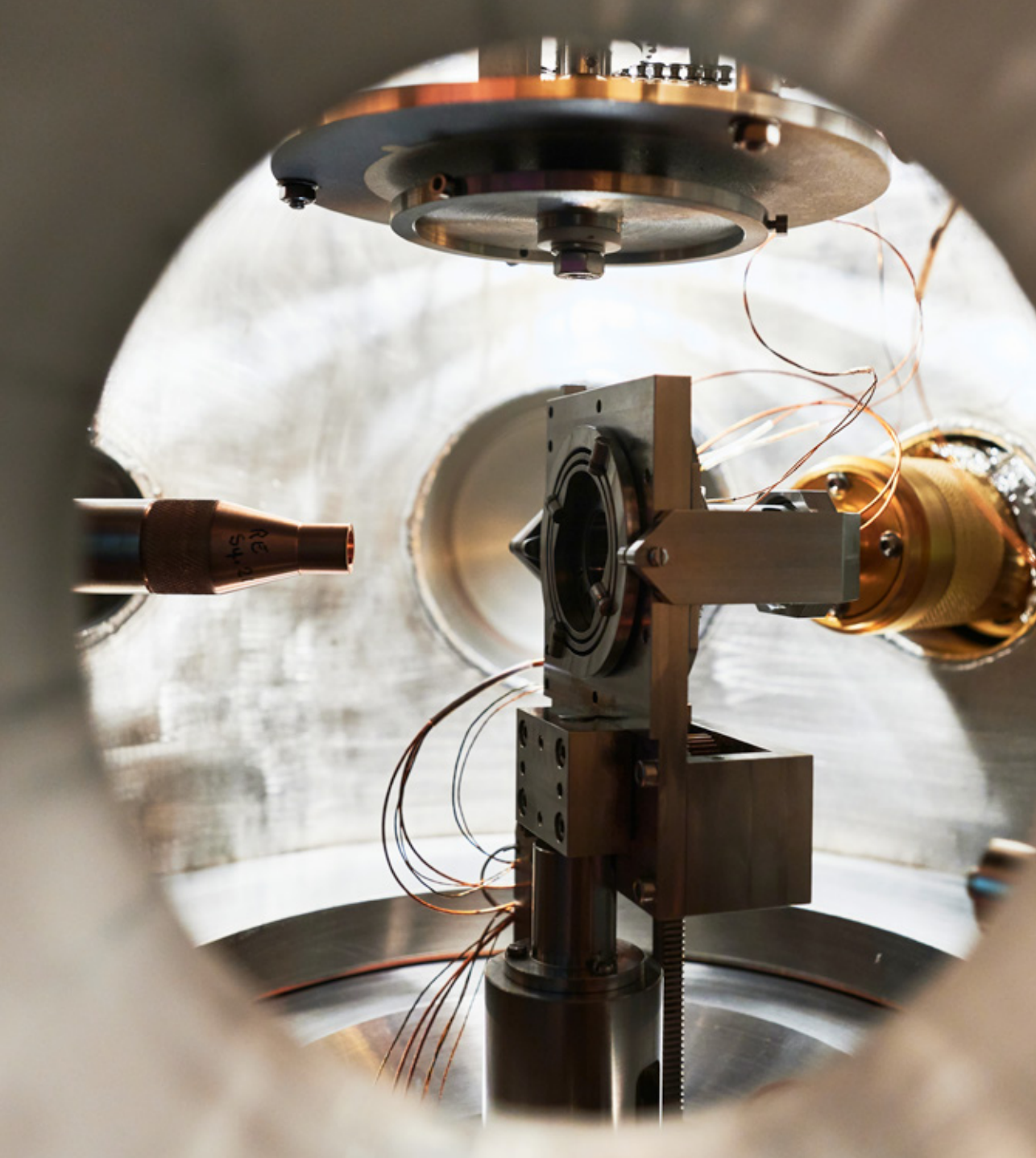


The right contacts for generating business

A company may feel that entering the Big Science market would be too big a step. However, many Swedish companies have both the expertise and the capacity to supply products and services to Big Science organisations.

Big Science Sweden provides guidance, and facilitates the first important contacts that can lead to a business relationship.

Companies that have supplied equipment and services to Big Science research organisations have experienced that the orders stimulate their own R&D and innovation.


JSP

Swedish supplier network

Join our supplier network of around 250 members and start reaping the benefits immediately. Members can take part in events, access our expertise and guidance, and collaborate with other member companies and organisations.

Companies that already supply products and services to sectors with challenging demands, such as nuclear power, the defence industry, or oil and gas, probably already have expertise to become suppliers to Big Science facilities.

The Big Science Sweden team with The Swedish Guide.

The Swedish Guide: www.bigsciencesweden.se/news-media/publications
Online database: www.bigsciencesweden.se/the-swedish-guide


Big ScienceTechnical Seminar
Advanced Manufacturing


MATERIALS FOR FUTURE ELECTRONICS & DIGITALISATION


VISIT BIG SCIENCE IN GERMANY


FOCUSED TECHNICAL WORKSHOP
REMOTE HANDLING


IPAC '23
7 - 12 May 2023
Venice, Italy


SWEDEN @FAIR


PARTNERING IN BIG SCIENCE
OPPORTUNITY FOR SWEDISH COMPANIES TO MEET ASSYSTEM


Nordic ITER Business Forum
29-30 March 2022
Copenhagen
MEET FUSION FOR ENERGY, F4E/ITER REPRESENTATIVES IN PERSON
BOOK HOTEL NOW!
#NordicITER


Big Science Business Forum 2022


VINNOVA
big science sweden
SWEDISH
BIG SCIENCE FORUM
31 JAN – 1 FEB 2024 • CITY HALL, LUND, SWEDEN


Building excellent research facilities
PAN-EUROPEAN PARTNERING IN BIG SCIENCE
A virtual brokerage event with business meetings
PERIIA
ENRIITC
Big Science Business Forum
big science sweden


Focused Technical Workshop
Vacuum Technology

Our business events

Big Science Sweden arranges events that spread the latest Big Science news, develop technological and business skills and expertise, and facilitate direct contact with representatives from the research facilities.

Our events range from large conferences to smaller seminars and personal meetings.

Examples

BIG SCIENCE TECHNICAL SEMINARS

The aim is to strengthen the expertise and skills of supplier companies and their abilities to deliver advanced technology. World-class speakers and experts participate in these seminars.

SWEDISH BIG SCIENCE FORUM

Researchers and representatives from industry and research facilities meet to discuss the latest developments in Big Science, share experiences, make contacts, and meet possible business partners.

AIMDAY BIG SCIENCE TECHNOLOGY

Research facilities discuss their challenges with scientists from Swedish universities and institutes and representatives from Swedish high-tech companies.

LUND, SWEDEN

MAX IV - MAKING THE INVISIBLE VISIBLE

LUND, SWEDEN

ESS – A WORLD LEADING SCIENCE AND TECHNOLOGY INFRASTRUCTURE

European Big Science organisations

Neutron sources for materials research

ESS – SWEDEN
ESS, (European Spallation Source) currently under construction in Lund, Sweden, will be a multi-disciplinary research facility using the world's most powerful neutron source, based on particle accelerators and spallation technology. ESS will provide neutron beams up to 100 times brighter than those currently available.

ISIS – UK
The ISIS pulsed neutron and muon source produces beams that allow scientists from academia and industry to study materials at the atomic level, using a suite of instruments often described as 'super-microscopes'. ISIS plays a vital role in the portfolio of analysis techniques used by researchers in fields such as nanotechnology, pharmaceuticals, engineering, clean energy, and quantum computing.

ILL – FRANCE
ILL is a nuclear fission reactor that operates the most intense neutron source in the world, a 58.3 MW nuclear reactor designed for high neutron flux. Research using the beams focuses primarily on fundamental science in a variety of fields, including condensed matter physics, chemistry, biology, nuclear physics, and materials science.

Radiation facilities

MAX IV – SWEDEN
The MAX IV Laboratory is a synchrotron light facility, whose beamlines provide modern X-ray spectroscopy, scattering/diffraction, and imaging techniques. This is the world's most brilliant synchrotron light source, capable of viewing material structures atom by atom. MAX IV facilitates discoveries of new structures at nano level, and scientists are able to monitor chemical processes in real time.

ESRF – FRANCE
ESRF is the world-leading source of synchrotron and a centre of excellence for fundamental and innovation-driven research for imaging and studying the structure of matter at atomic and nanometric scales in many fields. Visiting scientists conduct research using the X-ray beams that are 100 billion times more powerful than the X-rays used in hospitals.

DESY – GERMANY
DESY is a facility at which particle accelerators are used to investigate the structure of matter. Researchers explore the microcosm in all its variety – from the interactions of tiny elementary particles and the behaviour of new types of nanomaterials to biomolecular processes essential to life. Research fields range from nanomaterials and semi-conductors to pharmaceuticals and materials for solar panels.

XFEL – GERMANY
European XFEL is the world's most powerful X-ray laser facility, and is opening up completely new research opportunities for scientists and industrial users. The facility is powered by a 3.4-km linear accelerator, which can generate 27,000 X-ray flashes per second, each of a duration of less than 100 quadrillionths of a second.

Particle physics

CERN – SWISS/FRENCH BORDER

CERN (Organisation Européenne pour la Recherche Nucléaire) houses the world's largest and most complex scientific instruments – purpose-built particle accelerators and detectors. These are used by scientists to advance the boundaries of knowledge regarding the origins of our universe and the basic constituents of matter, subatomic particles.

FAIR – GERMANY

FAIR, a facility for antiproton and ion research, is currently under construction. Matter that only exists in outer space will be produced in a lab for research, and FAIR will be able to accelerate ions of all the natural elements, as well as antiprotons. Experiments at the facility will advance technology in many areas, such as information and superconductor technology.

Fusion research

FUSION FOR ENERGY – SPAIN

F4E (Fusion for Energy) is the EU's joint undertaking for ITER and the development of fusion energy. F4E is responsible for providing Europe's in-kind and in-cash contribution to ITER. F4E works closely with industry and R&D organisations across Europe to design, manufacture, and test technical components for fusion installations.

ITER – FRANCE

ITER is a global project to build the world's largest Tokamak for research into fusion energy. Experiments at the facility will advance fusion science and prepare the way for the fusion power plants of tomorrow. ITER will be the first facility to integrate all the various technologies needed to operate a fusion reactor.

Ground-based space research

ESO – GERMANY/CHILE

ESO focuses on the design, construction, and operation of powerful ground-based facilities for astronomy. The observatory consists of telescopes at three sites in the Atacama Desert in Chile. The Very Large Telescope can view objects at the edge of our universe and help address fundamental questions.

EISCAT – SWEDEN

EISCAT conducts ionospheric and atmospheric measurements using a technique called 'incoherent scatter radar'. EISCAT operates equipment in three countries – Finland, Norway, and Sweden – and all the facilities are located north of the Arctic Circle. The next-generation research radar facility, EISCAT_3D, is under construction, and will come into operation in 2023.

SKA – SOUTH AFRICA AND AUSTRALIA

The SKA Observatory is a next-generation radio astronomy-driven Big Data facility that will revolutionise our understanding of the Universe and the laws of fundamental physics. It will be the world's largest radio telescope, with a collecting area of one square kilometre. These telescopes will position the SKAO as the leading research infrastructure for radio astronomy globally.

A designated member of the Big Science Sweden team is responsible for each facility, maintaining contacts, building relationships, and getting to know the facility's organisation and needs.

Contact us

Executive management

Dr Catarina Sahlberg

Programme Director. Industrial Liaison Officer: ESS, Contact point: ISIS.
Based at Uppsala University.
catarina.sahlberg@bigsciencesweden.se, +46 729 99 92 91

Dr Patrik Carlsson

Programme Co-Director. Industrial Liaison Officer: ITER, Fusion4Energy, ESO, SKA.
Based at Chalmers Industriteknik/Chalmers.
patrik.carlsson@bigsciencesweden.se, +46 766 06 16 20

Dr Fredrik Engelmark

Business Developer & Project Manager. Industrial Liaison Officer: CERN, FAIR, XFEL.
Contact point: DESY. Based at Uppsala University.
fredrik.engelmark@bigsciencesweden.se, +46 729 99 92 68

Operational team

Dr Anna Bille

Business Developer & Project Manager. Based at Lund University.
anna.bille@bigsciencesweden.se, +46 73 596 65 17

Max Collins

Business Developer & Project Manager. Based at Lund University.
max.collins@bigsciencesweden.se, +46 7 09 10 20 95

Dr Sven-Christian Ebenhag

Business Developer & Project Manager. Based at RISE in Borås
sven-christian.ebenhag@bigsciencesweden.se, +46 702 95 95 82

Dr Carin Eklöf-Österberg

Business Developer & Outreach Manager. Based at Chalmers Industriteknik/Chalmers.
carin.eklof-osterberg@bigsciencesweden.se, +46 76 632 75 84

Dr Philip Gillgard

Business Developer & Knowledge Transfer Manager. Based at Chalmers Industriteknik/Chalmers.
philip.gillgard@bigsciencesweden.se, +46 70 798 62 55

Dr Ernesto Gutiérrez

Outreach & Knowledge Transfer Manager. Based at Uppsala University.
ernesto.gutierrez@bigsciencesweden.se. +46 70 167 9520

Lars-Åke Isaksson
Business Developer & Project Manager. Based at Luleå University of Technology/LTU Business.
lars-ake.isaksson@bigsciencesweden.se, +46 70 360 19 36

Håkan Nilsson
Business Developer & Project Manager. Based at RISE in Borås.
hakan.nilsson@bigsciencesweden.se, +46 70 58 52 905

Dr Mike Olsson
Business Developer & Project Manager. Contact point: MAX IV. Based in Lund.
mike.olsson@bigsciencesweden.se, +46 708 30 97 95

Dr Ekaterina Osipova
Research Advisor. Luleå University of Technology.
ekaterina.osipova@bigsciencesweden.se, +46 920 49 14 63

Mattias Viktorsson
Business Developer & Project Manager. Based at RISE in Borås.
mattias.viktorsson@bigsciencesweden.se, +46 10 516 55 02

Dr Adam Wikström
Business Developer & Project Manager. Contact point: EISCAT.
Based at Luleå University of Technology/LTU Business.
adam.wikstrom@bigsciencesweden.se, +46 702 35 83 10

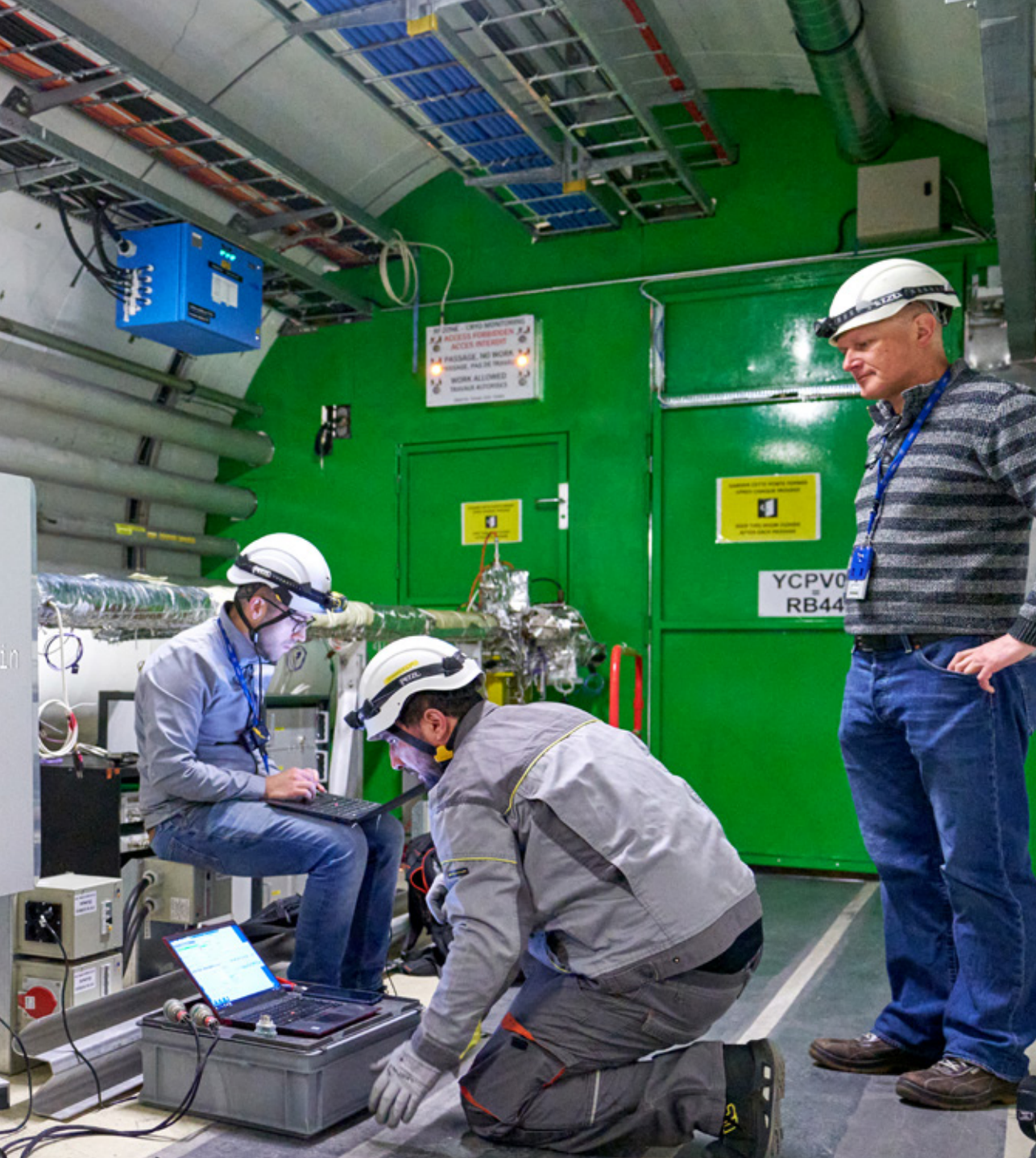
External relations and communication

Amelie Hallin
External Relations Manager. Based in Lund.
amelie.hallin@bigsciencesweden.se, +46 701 40 02 44

Cajsa Fredlund
Communication Manager. Based in Lund.
cajsa.fredlund@bigsciencesweden.se, +46 705 09 29 32

Ingela Bogren
Communication Officer. Based in Lund.
ingela.bogren@bigsciencesweden.se, +46 73 359 54 75

Become a supplier to large research organisations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Big Science Sweden is Sweden's Industrial Liaison Office. We support Swedish companies aiming to supply products and services to international research facilities, such as ESS, MAX IV, CERN, ESO, and ITER.

We act as a bridge, facilitating collaboration between industry, academia, and the Big Science research organisations.

Swedish Research Council

VINNOVA
Sweden's Innovation Agency

big science sweden

Industrial Liaison Office, ILO • Knowledge Transfer Office, KTO • Outreach

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