

ECIU Research Survey

(1997 – updated 1999)

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Appendix: Matrix partners - research profile ECIU

1. Introduction

Some of Europe's most innovative universities have come together in 1996 to form a new continentwide network to share and build on their successes as entrepreneurial institutions. The name of the consortium will be ECIU, European Consortium of Innovative Universities, to underline the European dimension of a limited group of innovative universities dedicated to the development of an innovative culture in its institutes and to play a catalytic role for innovation in industry and for society at large. The partner institutions of ECIU are conscious of the fact that only a small number of European higher education institutions are dedicated to innovative action in research, teaching, and administration. Together, the ECIU partners undertake to exchange knowledge and experience through intensive co-operation and to develop joint, international, innovative, institutional strategies.

The new consortium comprises the following institutions:

Aalborg Universitet , Denmark	Technische Universität Hamburg-Harburg , Germany
Universidade de Aveiro , Portugal	Joensuun Yliopisto , Finland
Universitat Autònoma de Barcelona , Spain	University of Strathclyde , United Kingdom
Chalmers University , Sweden	Universiteit Twente , The Netherlands
Universität Dortmund , Germany	University of Warwick , United Kingdom

The consortium plans to remain small and tightly focused to assure the closest and most efficient interaction between the partners. University of Twente will host the secretariat in co-operation with the University of Warwick. The meetings of the consortium will be

chaired alternately by the hosting institution.

The Consortium members

- organise innovative forms of teaching, training and research
- have a record of developing an entrepreneurial and innovative culture
- have strong links with industry and the surrounding region
- are active in creating new forms of management
- are committed to sustaining and nurturing research staff who think and act in an international context

In addition to the extensive international networks that ECIU partners are involved in, ECIU will look for co-operation with similar networks in other geographical regions. For further information please contact:

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2. ECIU Research profile

The partners in ECIU are conscious of the fact that, for a successful development of the Consortium, a strong academic base is needed. Major research groups will be triggered, from a strategic perspective, to co-operate. This perspective is:

- an innovative research-culture: problem-oriented research- programmes, intertwined with industrial research, creating a multi-disciplinary training environment for young researchers and for trainees from industry;
- a pro-active approach towards the 5th Framework Programme. Focusing on fields like the information society, innovation, high technology SME's;
- joint doctoral degrees intertwined with the strategic fields of research.

In the framework of ECIU taskforces are preparing projectproposals and policy-papers on issues mentioned above. The following main fields of research, *in collaboration with industry*, of the ECIU partners can be identified. Ongoing research in Humanities and Social Sciences is not listed here.

- Telematics, Optical materials, Telecommunication, Computers engineering
- Information technology, Multimedia applications
- Chemical Engineering, Process technology, Membrane Technology, Supramolecular chemical engineering, Polymer Technology
- Energy technology, clean technology
- Micro-electronical engineering, Micro-systemstechnology, Sensors and Actuators
- Materials Science, New materials, Superconductors, Solid mechanics
- Mechatronics, robotics, artificial intelligence
- Biomedical technology, medical informatics and image analysis
- Management of technology
- Building technology and structural engineering, civil engineering

- Food technology
- Bio-engineering, molecular and cellular biology
- Production technology, Logistics, Automotive engineering
- Ship & Marine Technology

Numerous research projects are conducted in collaboration with industrial partners. Some well-known European partners of the member institutions are: Glaxo Wellcome, Unilever, DSM, AKZO Nobel, Bayer, ICI, Siemens, Philips, IBM, British Aerospace, Airbus, Rolls Royce, Saab, Bosch, Volkswagen, Rover, BMW.

Facts and figures

Together the member institutions of the Consortium generate an aggregate annual turnover of approximately 1.5 billion US dollar, from which 25% can directly be attributed to contract research for industrial partners. The total number of students (under- and postgraduates) at the 10 partner Institutions is 125.000.

2.1 University of Twente

<http://www.utwente.nl>

The University of Twente is subdivided into the following schools:

- Technical
 - Mechanical Engineering (WB);
 - Electrical Engineering (EL);
 - Chemical Engineering (CT);
 - Applied Physics (TN);
 - Applied Mathematics (TW);
 - Computer Science (INF);
 - Philosophy of Science, Technology and Society (WMW);
 - Civil Engineering and Management CiT).
- Social
 - Management Studies (T&M);
 - Public Administration (BSK);
 - Educational Science and Technology (TO);
 - Business Information Technology (BIT);
 - Applied Communication Sciences (TCW).

With regard to the research strategy of the University of Twente, a number of important research themes can be distinguished:

- Telematics & Information Technology;
- Process Technology;
- Micro-systems technology, Sensors and actuators;
- Materials Research, Polymer Technology;
- Mechatronics;
- Biomedical Technology;
- Laser Technology;
- Supramolecular chemical engineering;

Netherlands School for Advanced Studies and Hydraulic Geotechnical Engineering (WATER)							1			
Netherlands Graduate School of Science, Technology and Modern Culture (WTMC)										1
Center for Higher education Policy Studies (CHEPS)							1	m	1	1
Institute for Biomedical Technology (BMTI)	1	m	1	1						
Drebbel Institute	1		m		1	1				
Centre for Telematics and Information Technology (CTIT)			1		1	m	1	1	1	1
Centre for Clean Technology and Environmental Policy (CSTM)	1	1					1	m		1
Centre for Production, Logistics and Operational Management (CPLM)	m				1		1			
Twente Institute of Mechanics (TIM)	m	1		1	1					
Centre for Applied Research on Education (OCTO)									m	

1 = participation

m = leading faculty

2.2 Aalborg

Aalborg has indicated that they consider the following research areas as their most important ones:

- Telecommunications;
- Medical information technology and vision computers;
- Decision support systems and artificial intelligence;
- Integrated production technology;
- Material science;
- Energy conservation technology;
- Biotechnology;
- Environmental technology;
- Civil engineering and construction;
- Graphic information systems;
- Planning and technology;
- Computer science;
- Physics.

Furthermore, Aalborg considers the following research areas to be particularly strong:

- Electrical engineering and IT;
- Mobile communication;
- Medical technology and IT.

The available documentation material (*The European Doctoral School of Technology and Science at Aalborg University, Ph.D. programme, 7 folders*) indicates that Aalborg is offering Ph.D. programmes in the following areas:

- Mathematics and physics;
- Computer science and engineering;
- Electrical and electronic engineering;
- Planning and development;
- Civil engineering;
- Mechanical engineering;
- Biotechnology and environmental engineering.

Information on the internet

(<http://www.auc.dk/reseprog.htm>)

The Faculty of Engineering and Science

Department of Building Technology and Structural Engineering

- Structural Time Domain Identification Group
- Earthquake Test on RC-frames
- Indoor Environmental Research Projects
- Application of Neural Networks in Numerical Modelling of a Human Ship Navigator
- Dynamics of Structures

Institute of Electronic Systems

Departments and research activities at the institute:

- Communication Technology
- Control Engineering
- Medical Informatics and Image Analysis
- Mathematics
- Computer Science

Department of Production

Research areas:

- Production Technology for Polymers and Composites
- Sheet Metal Forming
- Automatic Control of Production
- Design and Production
- Information Technology in Production Systems
- Quality Control and Environmental Management
- Production Management and Control
- Technology Management

- Industrial Economy
- Process Technology and Production Preparation

Institute of Energy Technology

Departments:

- Department of Power Systems and High Voltage Technology
- Department of Electrical Energy Conversion
- Department of Thermodynamics and Hydraulics

Institute of Mechanical Engineering

Research groups:

- Computer-aided machine design concerning optimization of machine design, computer-aided design (CAD) and finite element analysis (FEM)
- Mechanical properties of polymer-based composite materials
- Strength of ceramic materials
- Corrosion and heat treatment
- Fracture mechanics and crack initiation
- Strength of sandwich constructions and non-linear properties

Department of Development and Planning

- Laboratory for GeoInformatics
- The Land Management Research Group
- The Urban Planning Research Group
- The Transport Research Group (TRG)
- Ecology and Energy Research Group
- Research Group Technology and Society

The International Business Economics Research Unit

The Research Centre for Development and International Relations (DIR)

European Studies

FREIA - Feminist Research Centre in Aalborg

History og and Development of Society Group

Danish center for Environment and Planning

Virtual Centre for Health Informatics

GISplan Laboratory

LASTIN

2.3 Chalmers University of Technology

Main scientific areas (*Folder: "Chalmers University of Technology Sweden", page 9*):

- Mathematical and computing sciences;
- Physics and engineering physics;
- Chemical engineering;
- Electrical and computer engineering;

- Radio and Space science;
- Technology management and economics;
- Mechanical and vehicular engineering;
- Civil engineering;
- Environmental sciences;
- Architecture and community planning.

Four of the region's specialist fields (*Folder: "West Sweden; focused on research and development", page 3*):

- Environmental research;
- Marine research and development;
- Materials research;
- School of technology management and economics.

Information on the internet

(<http://www.chalmers.se/HyperText/Research-E.html>)

Chalmers nine schools

Architecture

Departments and divisions of the school:

- Architecture
 - Architectural Design
 - Housing Design
 - Industrial Architecture and Planning
- Building Design
 - Building Aerodynamics
 - Building Design and Construction and Structural Design
 - Design Methodology and Digital Design Media in Architecture and Planning
 - Theoretical and Applied Aesthetics
- History in Architecture
 - Conservation of Buildings and Areas
 - Theory and History of Architecture
- Urban Design and Planning
 - Urban Design and Planning
 - Urban Transport Planning

Chemical Engineering

Departments and divisions of the school:

- Chemical Engineering Design
- Chemical Reaction Engineering
- Food Science
- Engineering Chemistry
- Ceramic Technology

- Forest Products and Chemical Engineering
- Chemical Environmental Science
- Heat and Power Technology
- Inorganic Chemistry
- Nuclear Chemistry
- Organic Chemistry
- Physical Chemistry
- Polymer Technology

Civil Engineering

Departments and divisions of the school:

- Applied Acoustics
- Building Materials
- Building Physics
- Building Services Engineering
- Geology
- Geotechnical Engineering
- Hydraulics
- Road and Traffic Planning
- Sanitary Engineering
- Technical Environmental Planning
- Structural Engineering
- Concrete Structures
- Dynamics in Design
- Steel and Timber Structures
- Structural Mechanics

Electrical and Computer Engineering

Departments and divisions of the school:

- Applied Electronics
- Computer Engineering
- Control Engineering
- Electric Power Engineering
- Electrical Machines and Power Electronics
- Electric Power Systems
- High Voltage Engineering
- Electromagnetic Field Theory
- Information Theory
- Microwave Technology
- Optoelectronics and Electrical Measurements
- Radio and Space Science with Onsala Space Observatory
- Solid State Electronics

Environmental Sciences

Program areas of the School:

- Air Pollution and Radiation
- The Aquatic Environment
- Center for Environmental Economics and Social Sciences
- Environmental Effects of Combustion Processes, Energy Systems
- Ecotoxicology and Biological Diversity
- Material Flows - Material Balances
- Soil, Infrastructure, Planning and Building
- Traffic

Mathematical and Computing Sciences

Departments and divisions of the school:

- Mathematics
- Applied Mathematics
- Mathematical Statistics
- Mathematics
- Computing Science

Mechanical and Vehicular Engineering

Departments and divisions of the school:

- Energy Conversion
- Engineering Metals
- Machine and Vehicle Design
- Naval Architecture and Ocean Engineering
- Hydromechanics
- Marine Structural Engineering with Systems Analysis
- Polymeric Materials
- Production Engineering
- Manufacturing Automation
- Manufacturing Engineering
- Theoretical and Applied Mechanics
- Mechanics
- Solid Mechanics
- Thermo and Fluid Dynamics

Physics and Engineering Physics

Departments and divisions of the school:

- Applied Physics
- Condensed Matter Physics
- Condensed Matter Theory
- Materials and Surface Physics

- Surface Physics
- Chemical Physics
- Physical Resource Theory
- Physics
- Applied Semiconductor Physics
- Applied Solid State Physics
- Atomic Physics
- Electronic Structure of Condensed Matter
- Environmental Physics
- Ion and Semiconductor Physics
- Liquid Crystals
- Materials Physics
- Microscopy and Microanalysis
- Molecular Physics
- Physical Electronics and Photonics
- SIMS-Laboratory
- Solid State Physics
- Subatomic Physics
- Reactor Physics
- Theoretical Physics and Mechanics
- Applied Mathematical Physics
- Astronomy and Astrophysics
- Elementary Particle Physics
- Solid State Theory

Technology Management and Economics

Departments of the school:

- Building Economics and Construction Management
- Consumer Technology
- History of Technology and Industry
- Industrial Management and Economics
- Industrial Marketing
- Injury Prevention
- Innovation Engineering and Management
- Operations Management and Work Organization
- Systems Management
- Transportation and Logistics

2.4 Universitat Autònoma de Barcelona

Research fields in the area "technology" (<http://blues.uab.es/recerca/english/depart.htm> and folder "Postgraduate programs 1995-1996, Universitat Autònoma de Barcelona", page 23-42):

Experimental Sciences and Technologies

- Mathematics
 - Mathematical Analysis
 - Teaching Mathematics
 - Statistics And Operative Research
 - Geometry And Topology
 - History Of Science
 - Logic
 - Applied Mathematics
 - Algebra

Computer Sciences

- Computer Architecture And Technology
- Computing And Artificial Intelligence
- Automatic And Systems Engineering

Physics

- Electronics
- Applied Physics
- Atomic, Molecular And Nuclear Physics
- Condensed-Matter Physics
- Theoretical Physics
- Optics

Chemistry

- Chemical Engineering
- Analytical Chemistry
- Physical Chemistry
- Inorganic Chemistry
- Organic Chemistry

Biochemistry and Molecular Biology Animal Biology, Plant Biology and Ecology

- Animal Biology
- Plant Biology
- Ecology
- Edaphology And Agricultural Chemistry

Geology

- Crystallography And Mineralogy
- Stratigraphy
- Geodynamics

- Palaeontology
- Petrology And Geochemistry

Teaching Mathematics and Experimental Sciences

Health Sciences

Cell Biology and Molecular Biology

- Cell Biology
- Physiology
- Immunology

Genetics and Microbiology

- Genetics
- Microbiology

Animal Pathology and Production

- Clinical Anatomy
- Nutrition And Bromatology
- Animal Pathology
- Animal Production
- Food Technology

Medicine

- History Of Medicine
- Medicine
- Radiology And Physical Medicine

Paediatrics, Obstetrics and Gynaecology, and Preventive Medicine

- Preventive Medicine And Public Health
- Obstetrics And Gynaecology
- Paediatrics

Pharmacology and Psychiatry

- Pharmacology
- Psychiatry

- Toxicology And Health Legislation

Surgery

Morphological Sciences

- Clinical Anatomy
- Morphological Sciences

Psychology of Health

- Methodology In Behavioural Sciences
- Personality, Evaluation And Psychological Treatment
- Psychobiology
- Social Psychology

2.5 Universität Dortmund

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Faculties:

- Mathematics
- Physics
- Chemistry
- Computer Science
- Statistics
- Chemical Engineering
- Mechanical Engineering
- Electrical Engineering
- Spatial Planning
- Building Sciences - Architecture and Civil Engineering
- Business, Economics and Social Sciences
- Education and Biology
- Special Education
- Social and Behavioral Sciences, Philosophy, and Theology
- Languages and Literatures, Journalism, and History
- Music, Art, Textiles, Physical Education, and Geography

Institutes:

- Institute for Accelerator Physics and Synchrotron Radiation (DELTA)
- Institute for Environmental Research
- Centre for Higher Education and Instructional Development
- Institute of Robotics Research

- Institute for School Development Research

Institutes affiliated with the University of Dortmund:

- Institute for Industrial Physiology at the University of Dortmund
- Institute for Spectrochemistry and Applied Spectroscopy
- Institute for Gerontology

Research areas of particular interest to companies:

- Materials
- Logistics/Material flow
- Robotics/Handling technology
- Manufacturing technology
- Computational Intelligence (Fuzzy Technologies, Neural Networks, Evolutionary Algorithms)
- Electromagnetic compatibility
- Microelectronics
- Microstructure technology
- Integrated optics
- Automation technology
- Quality management
- Environmental technology/Safety technology
- Energy technology
- Parallel computing
- Statistics

2.6 Technische Universität Hamburg-Harburg

Research departments at Technische Universität Hamburg-Harburg (<http://www.tu-harburg.de/allgemein/fsp/english/fspindex.html>):

- RD 1: Town, Environment, Technology 1.02 Water Treatment Technology
1.03 Environmental Technology
1.04 Waste Management
1.05 Urban Planning and Development I (Townplanning)
1.06 Urban Planning and Development II (Urban and Regional Economics and Sociology)
1.07 Urban Planning and Development III (Object-related Townplanning, Urban Ecology)
1.08 Ergonomics
1.081 Ergonomics/1
1.09 Water Resources and Water Supplies
1.11 Technology Assessment
1.12 Process Technology and Vocational Education

- RD 2: Systems Engineering 2.02 Electrical Engineering I (Measurement Engineering)
 - 2.03 Optics and Instrumentation
 - 2.04 Electrical Engineering XVII (Automatic Control)
 - 2.05 Electrical Engineering VIII (Process Automation Techniques)
 - 2.06 Electrical Engineering IV (Theoretical Electrical Engineering)
 - 2.07 Institute Automatic Control
 - 2.08 Aircraft Systems Engineering
 - 2.09 Biotechnology I (Bioprocess- and Biochemical Engineering)
 - 2.10 Biotechnology II (Biotransformations and Biosensors)
 - 2.11 Electrical Engineering III (Microwave Engineering)
 - 2.12 Mechanics I

- RD 3: Civil Engineering and Marine Technology 3.02 Fluid Mechanics
 - 3.03 Ocean Engineering I
 - 3.04 Ocean Engineering II (Structural Mechanics)
 - 3.05 Production and Manufacturing Technology
 - 3.06 Shipstructures and Structural Analysis
 - 3.07 Concrete Structures
 - 3.08 Steel Constructions and Timber Constructions
 - 3.09 Building physics and building materials
 - 3.10 Applied Structural Engineering

- RD 4: Information and Communication Technology 4.013 Central Laboratory for Computer Science and Communication
 - 4.2 Computer Science I (Digital Image Processing and Pattern Recognition)
 - 4.022 Softwaresystems (STS)
 - 4.03 Computer Science II (Microcomputer Technology and Data Processing Structures)
 - 4.04 Computer Science III (Programming Languages and Algorithms)
 - 4.05 Electrical Engineering II (Telecommunications)
 - 4.06 Electrical Engineering VI (Digital Communication Systems)
 - 4.07 Semiconductor Technology
 - 4.08 Electrical Engineering V (Technical Electronics)
 - 4.09 Electrical Engineering VII (Materials for Microelectronics)
 - 4.10 Computer Science V (Telematics)
 - 4.11 Computer Science VI (Distributed Digital Systems)
 - 4.13 Mathematics

- RD 5: Materials, Design, Manufacturing 5.013 Central Division Electron Microscopy
 - 5.02 Engineering Design I
 - 5.03 Engineering Design II
 - 5.04 Production Technology I
 - 5.05 Production Technology II (Machine Tools and Automation)

- 5.06 Physics and Technology of Materials
- 5.061 Materials Physics (GKSS)
- 5.07 Physical Metallurgy and Materials Technology
- 5.071 Materials Mechanics (GKSS)
- 5.08 Advanced Ceramics
- 5.09 Polymers and Composites
- 5.10 Biomechanics
- 5.12 Technology of Manufacturing and Vehicles

- RD 6: Processing Technology and Energy Systems 6.02 Chemical Engineering I (Solids Processing)
- 6.03 Chemical Engineering II (Separation Processes)
- 6.04 Chemical Engineering III (Process- and Plant Engineering)
- 6.05 Chemical Engineering IV (Chemical Reaction Engineering)
- 6.06 Apparatus Technique
- 6.07 Energy Systems and Marine Engineering
- 6.08 Energetics
- 6.9 Auxiliary Machines and Automation

2.7. Universidade de Aveiro

- Department of Biology
 - Molecular Biology
 - Toxicology
 - Freshwater Ecology
 - Marine Microbiology
 - Plant Physiology
 - Agroforestry
 - Estuary
 - Marine Ecology

- Department of Ceramics and Glass Engineering
 - Electroceramics
 - Electrochemical Applications of Ceramic Materials
 - Engineering Materials
 - Refractory Materials
 - Clay-based Ceramics
 - Bioceramics
 - Superconductors
 - Glass and Novel Preparation Processes.

- The Department of Chemistry

- Mass Spectrometry
- Inorganic Chemistry
- Food Biochemistry
- Analytic and Environmental Chemistry
- Organic Chemistry

- The Department of Electronics and Telecommunications
 - Scientific Instrumentation
 - Wide Band Systems of Communication
 - Optic Communications
 - Microwave Communications
 - Information Technology applied to Health
 - Telematics
 - VLSI Architecture
 - Systems and Services in Telecommunications
 - Industrial Instrumentation
 - Clinical Workstations

- The Department of Environment and Planning
 - Characterization and Treatment of Waters and Liquid Effluents
 - Chemical Characterization of the Atmosphere
 - Gaseous Effluents
 - Atmospheric Impact of Energy Conversion
 - Natural Resource Planning

- The Department of Geosciences
 - Geology
 - Applied Geology
 - Geochemistry
 - Geophysics
 - Industrial Minerals and Rocks
 - Remote Detection
 - Geology of Petroleum
 - Hydrology

- The Department of Mathematics
 - Analysis and Geometry
 - Optimisation
 - Mathematical Systems and Control Theory
 - Statistics

- Data Analysis

- The Department of Physics
 - Semiconducting Materials with Applications in Optoelectronics
 - Non-Crystalline Materials and Disordered Systems
 - Atmospheric Environmen; Teaching of Physics
 - Coherent Optic Systems
 - Physics of the Ocean and Atmosphere

- Section of Management and Industrial Engineering
 - Industrial Management and Engineering
 - Financial Management
 - Organisational Behaviour and Human Resources Management
 - Management of Science and Technology
 - Tourism and Tourism Planning

- The Autonomous Section of Mechanical Engineering
 - Fluid Mechanics
 - Materials
 - Technological Processes

2.8. University of Warwick

Information on the Internet

<http://www.warwick.ac.uk/fac/>

Faculty of Science

- Biological Sciences

Research Groups:

- Microbiology
- Virology
- Ecosystems Analysis and Management
- Warwick University Parasite Epidemiology Research Team (WUPERT)
- Cell and Molecular Development
- Molecular Cell Biology
- Protein Structure
- Molecular Medicine

- Chemistry

- Computer Science

Research Groups:

Software

- Empirical Modelling
- History of Computing
- Software Engineering
- Functional Programming

Theory of Computation

- Algorithms and Complexity
- Semantics of Programming Languages and Process Calculus

Systems and Applications

- Agent-Based Systems
- Artificial Intelligence
- High Performance Architectures
- Image and Signal Processing
- Parallel Systems and VLSI

- Engineering

Research Groups

○ Civil

- Construction Management
- Construction Materials
- Fluid Mechanics
- Geotechnical Engineering
- Structural Engineering

○ Electrical and Control

- Deconvolution Techniques
- System Identification

○ Electronics

Research Areas

- Digital Systems
- High-integrity and Safety-critical Systems
- Image Processing and Expert Systems (IPES) Laboratory
- Intelligent Systems Engineering Laboratory
- Microcontroller Expert Unit
- Microsensors and Microsystems Technology
- Telecommunications
- Ultrasonic Transducers and Systems

- Instrumentation and Nanotechnology
- Mechanical

Research Themes

- Fluid Mechanics and Thermodynamics
- Development Technology
- Design

- Warwick Manufacturing Group

Research Groups

- Advanced Technology Centre
- Controller Area Networks
- CadCam Centre
- Centre for Catalytic Systems and Materials Engineering
- Computational Design Analysis
- Partners in Excellence
- Rapid Prototyping and Tooling Centre
- Simulation Group
- Strategic Advanced Light Weight Vehicle Operation
- Sun European Manufacturing Centre Of Excellence
- TEAM

- Mathematics

Research Groups

- Dynamical Systems
- Quantisation

- Postgraduate School of Medical Education

Discipline Sections

- Child Health
- Health Sciences
- Medicine
- Obstetrics and Gynaecology
- Primary Health Care
- Public Health
- Psychological Medicine
- Surgery

- Physics

Research Areas

- Experimental Solid State Physics
- Physics of Materials
- Semiconductor Layer Structures
- Theoretical Physics
- Space and Astrophysics

- Psychology

Research areas

- Cognitive Science
- Developmental Psychology
- Chemoreception
- Relationships

- Statistics

2.9 University of Joensuu

Faculty of Natural Sciences

- Gas-phase organic chemistry
- Protein crystallography
- Molecular modelling
- Catalysis
- Inorganic and analytical chemistry
- Materials chemistry
- Human-computer interaction
- Software quality engineering
- Parallel algorithms
- Structured documents
- Complex analysis
- Potential theory
- Numerical analysis
- Diffractive optics
- Optical materials research
- Color research and pattern recognition
- Aquatic and terrestrial ecology and ecophysiology
- environmental research
- Aquatic exotoxicology
- Plant molecular biology

Faculty of Forestry

- Forest ecology and management
- Effect of climate change on forests
- Wood technology
- Forest management planning
- forest technology and wood procurement
- Remote sensing and GIS in Forestry

Faculty of Social Sciences

- Multiple use of forests
- Economics of forest sector and products industries
- Statistical Analysis of Expert Judgment
- Statistical Demography and Forecasting

Faculty of Education

- Educational technology and learning theories
- Higher education policy and university management

Faculty of Humanities

- Culture and history of Russia and the border regions

2.10 University of Strathclyde

Information on the Internet

<http://www.strath.ac.uk/Faculty/Science/>

Faculty of Science, Departments:

- Bioscience and Biotechnology
- Pure and Applied Chemistry
- Computer Science
- Immunology
- Mathematics
- Pharmaceutical Sciences
- Physics and Applied Physics
- Physiology and Pharmacology
- Statistics and Modelling Science
- Strathclyde Institute for Drug Research

Bioscience and Biotechnology:

Biotransformation:

- Biocatalysis in organic media
- Enzymes in aqueous conditions
- Bioreactors in microbial physiology

Food:

- Flavour Research
- Food Microbiology
- Food Biochemistry
- Nutrition

Environmental:

- bioremediation
- Stress Tolerance
- Biocontrol

Pure and Applied Chemistry

Divisions:

- Analytical Chemistry and Forensic Science
- Chemical Technology
- Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry

Computer Science

Research Interests:

- Advanced Information Processing (AIP)
 - Algorithms Problems Empirical Studies (APES)
 - Intelligent Knowledge Based Systems (IKBS)
 - Robust Human-Machine Interaction (RoHMI)
- Software Engineering (SE)
 - Software Quality Research Group (SQ)
 - Empirical Foundations of Computer Science (EFoCS)
- Concurrency and Parallelism (CONPAR)
- Advanced use of Computers in Education (ACE)

Immunology

Research areas:

- Monoclonal Antibodies
- The Regulation of Immune cell Function
- Parasitology
- The Immunobiology of Leucocyte Cell Membranes
- Neuroimmunology
- Immunomodulation
- Immunoadjuvants
- Immunodiagnostics
- Biochemistry of Oxidative Stress

Mathematics

Departmental groups

- Applied Analysis
- Continuum Mechanics
- Industrial Mathematics
- Numerical Analysis

Pharmaceutical Sciences

Research Groups

- Antiparasitic Chemotherapy Research
- Drug Delivery and Formulation Research
- Inflammation Research
- Pharmaceutical and Biomedical Analysis
- Pharmacy Practice research
- Phytochemistry
- Ophthalmic Research

Physics and Applied Physics

Research Groups in the department:

- Photonics and Laser Spectroscopy
- Nonlinear and Quantum Optics
- Quantum and Solid-State Theory
- Atomic, Molecular, Discharge and Plasma Physics
- Superconducting Devices Group
- Relativistic Electron Beams, Cyclotron Lasers and Masers
- Photophysics
- Environmental Optics
- Solid State Optical Spectroscopy
- Semiconductor Spectroscopy
- Electrodeposition of Silicon for PV Applications
- Linear and Nonlinear Optical Properties of Materials

Physiology and Pharmacology

Statistics and Modelling Science

Some of current research activities:

- Mathematical Biology
- Spatio-Temporal Stochastic Processes
- Statistical Pattern Recognition
- Statistical Models and Applications
- Stochastic Analysis
- Strathclyde Institute for Drug Research

SIDR's main areas of research expertise are:

- cardiovascular
- CNS pharmacology
- inflammatory disease
- natural products

Appendix:

	Aalborg	Aveiro	Joensuu	Barcelona	Chalmers	Dortmund	Hamburg	Strathclyde	Twente	Warwick
Telematics, Optical materials, Telecommunication, Computers engineering	x	x	-	x	x	x	x	x	x	x
Information technology, Multimedia applications	x	x	x	-	x	x	x	x	x	x
Chemical Engineering, Process technology, Membrane Technology, Supramolecular chemical engineering, Polymer Technology;	-	x	x	x	x	x	x	x	x	x
Energy technology, clean technology	x	x	-	-	x	x	x	x	x	-
Micro-electronical engineering, Micro-systems technology, Sensors and Actuators	x	x	-	-	x	x	x	x	x	x
Materials Science, New materials, Superconductors, Solid mechanics	x	x	x	-	x	x	x	x	x	x

Mechatronics, robotics, artificial intelligence	?	X	-	-	X	X	X	X	X	X	X	X
Biomedical technology, medical informatics and image analysis	X	X	X	X	X	-	-	X	X	X	X	-
Management of technology	X	X	X	-	X	X	X	X	X	X	X	X
Building technology and structural engineering, civil engineering	X	X	-	-	X	X	X	X	X	X	X	X
Food technology	-	X	-	X	X	-	-	X	X	X	-	-
Bio-engineering, molecular and cellular biology	-	X	X	X	-	-	-	X	X	X	-	X
Production technology, Logistics, Automotive engineering	X	X	-	-	X	X	X	X	X	X	X	X
Ship & Marine Technology	-		-	-	X	-	-	X	X	X	-	-

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