

As we are active in many disciplines, we offer a wide range of services to the pulp and forest-based industries. Our expertise in the development and evaluation of technology, materials, products and processes is internationally recognised and competitive. With our strong research environments, we represent a significant knowledge resource, which is continuously expanded through participation in research programs and partnerships with universities and institutes, both in Sweden and abroad.

SP Technical Research Institute of Sweden

Energy and environment

Development of sustainable technology requires multi-disciplinary knowledge and sustainable innovation processes, which are important parts of SP's work. Energy efficiency, biorefineries, emissions, conversion and distribution of energy, and renewable energy are some of our areas of strength, complemented by energy and materials recovery, risk assessment, service life assessment and environmental management. We also use energy and environmental systems analyses in order to place technology in a wider context and to make use of system solutions and knowledge in strategic decision-making processes.

Examples

- Industrial heat pumps for cooling and heating
- Process integration studies i.e. energy efficiency, new processes and units
- Optimization and validation of biorefinery processes in a demo plant
- Optimization and modeling of heat exchanger networks
- Optimization and modeling of evaporation plants

Wood technology and wood in construction

Focus areas in wood technology and wood construction include methods to measure and control the quality of logs and sawn products, timber drying, durability of wood and paint on wood, adhesives and bonding, wood composites and chemical modification of wood, design rules for wooden structures and fire safety in wooden buildings.

The group is also active in developing innovative uses of wood and plant fiber materials in areas such as novel textile manufacture and biorefining high-value chemicals.

Examples

- Cellulose dissolution
- Life cycle assessment
- Biobased binders
- Biobased coatings
- Biocomposites
- Modified wood and fibers



Measurement and calibration

We help industry to solve measurement problems, calibrate measuring equipment and operate an extensive program of training in measurement technology. Our broad span of activities means that we have close contacts with several sectors, putting us in a unique position to offer a wide range of measurement technology services, not only in our purpose built laboratories but also on site at our clients.

Chemistry, Materials and Surfaces

We offer expertise in organic and inorganic analytical chemistry, surface chemistry as well as in a broad spectrum of areas within materials technology. We develop and transfer competence, solutions and new technologies to a variety of industrial sectors. Activities range from PhD and postdoc projects to large national and international projects as well as bilateral industrial contracts.

- Formulation of functional nanomaterials
- Wetting, spreading and liquid penetration
- Adsorption of ink dyes and binder polymers
- Novel and sustainable materials for improved barrier functionality
- Biopolymer nanocomposites
- Biorefining surface chemistry
- Functional surfaces for easy cleaning, anti-icing and anti-corrosion
- Tactile perception of paper, hygiene products and engineered wood
- World-class toolbox for advanced surface analyses



CBI, Swedish Cement and Concrete Research Institute

The business concept for the Swedish Cement and Concrete Research Institute (CBI) is to create, apply and disseminate knowledge within the field of cement, concrete, rock materials and aggregate. Innovation takes place through research and development. Application takes place through commissioned assignments, testing and inspection. Finally, technology dissemination takes place through training courses and information.

The commissioned assignments are important parts of CBI's operations. The majority of the assignments are carried out by the Concrete Structures group.

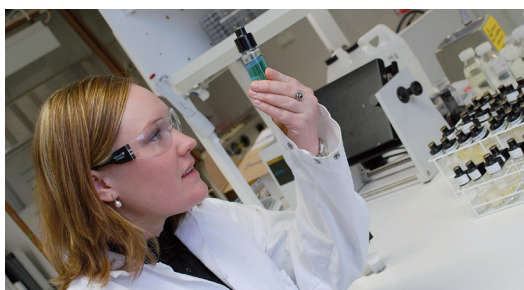
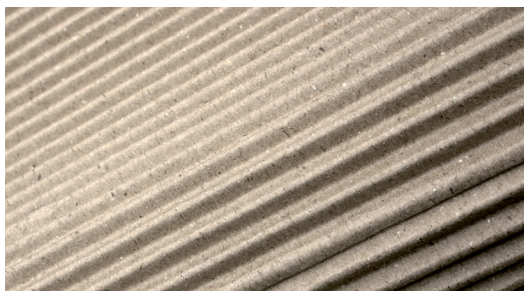
- Condition assessments
- Damage examinations
- Proposals for the repair including responsibility for the repair process
- Examination of moisture damages
- Examination of concrete structures that are suspected to contain aluminate cement.

SP Processum

SP Processum started in 2003 and has developed into a leading biorefinery initiative, both on a national and international level. SP Processum supports the development of new products based either on renewable wood raw material or on residual streams, mainly from the forest industry. We have access to large networks in the biorefinery area and can connect new ideas with companies and universities in R&D projects in order to create green chemicals, green materials and biofuels. Our core competences are biotechnology, energy technology, inorganic and organic chemistry and lignocellulosic feed stock.

We have possibilities to contribute to the financing of promising ideas in the biorefinery area through the SP Processum R&D council. In order to further strengthen and facilitate a quicker development from laboratory scale to full scale we have recently invested more than SEK 10 million in different pilot equipments.

SP Processum hosts the growth initiative "Biorefinery of the Future". Processes and projects are jointly run with the goal of using forestry and energy crops as raw material in order to meet present energy and climate challenges. By focusing on sustainable development, the basis for long term regional and national growth is formed.



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