

Why work with Xamk FiberLaboratory?

Our services combine laboratory-scale analytics with pilot-scale experimentation, enabling reliable data and practical insights.

Xamk FiberLaboratory supports companies and developers when new materials, processes or technologies need to be tested, optimised, or validated before scaling up.

You get:

- Clear pilot plans and data you can trust for confident scale-up decisions
- Documented results with expert interpretation
- Fast trials before major investments
- A trusted RDI partner for fibre-based innovation

We work closely with companies, startups, and technology developers — from early-stage concepts to industrially relevant pilots.

Let's discuss your case. Contact:

Juha Oksanen, Head of Laboratory, +358 40 577 3498

Jari Kapanen, Head of RDI Unit, +358 50 409 2081

Lasse Pulkkinen, Research Director, +358 44 571 5861

Email: firstname.lastname@xamk.fi

Xamk FiberLaboratory
Savonlinna, Finland



Looking ahead to 2027

- The FiberLaboratory pilot environment is continuously developing. New pilot equipment, extended testing capabilities and additional power reserves are strengthening our support for future fibre-based process development.



For process and forest industries, chemical manufacturers, and developers of measurement, control, and automation systems.

160 m² laboratory facilities

680 m² piloting space

From laboratory data to scalable processes



Xamk FiberLaboratory

**Piloting & analytics for
fibre-based solutions**

Inside Xamk FiberLaboratory
Scan to watch a short
introduction video:



xamk.fi/fiberlaboratory



FIBERLABORATORY

What we do?

Turn uncertainty into measurable results.

- Xamk FiberLaboratory's pilot hall enables fibre and chemical process testing in **industrially relevant conditions**.

Laboratory services – 160 m² of fiber, water, and sludge laboratory facilities

- Pulp and fibre analysis
- Mechanical fibre refining and fluidization
- Paper technical property testing
- Wastewater and sludge analysis
- Thermal and bubble / chemical VIS imaging
- NMR analytics

Recyclability testing for fibre-based packaging

- Simulates key recycling process stages: **disintegration, screening, and sheet formation**
- Produces comparable results in line with **CEPI method** and **4evergreen protocol**
- Supports compliance with PPWR recyclability requirements



xamk.fi/fiberlaboratory



Piloting services – 680 m² of piloting space

- High-speed mixing phenomenon testing
- Product development and material characterization
- Process troubleshooting
- Biomass processing (e.g. bleaching, chemical treatments for textile fibres)
- Testing of measurement and control systems



Pioneer in ozone technology for process industries

- Ozone treatments for lignin removal, bleaching, and molecular weight control
- Two different ozone-generation systems
- Research and piloting at two scales: **MC-loop** and **Quantum Mark IV laboratory mixer**



Carbon dioxide capture

- Testing and development of CO₂ capture processes
- Lab & pilot scale research
- Over a decade of experience in CO₂ capture



Pilot hall highlights

- **Consistency range:** 0–12 % (LC & MC)
- **Temperature / pressure:** up to 90 °C, 10 bar / 170 °C
- **Total power** up to 2 MW
- **Megaloop** 24 m³, flow up to 1300 l/s, compatible with external test systems
- **MC loop** 6 m³, pumping & mixing trials
- **Pressure reactor** 4.5 m³, bleaching, ozone, pulp treatment trials
- **Flash loop**, fast mixing & reaction studies

