Novel nonwovens by foam forming

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Stepping out to new application areas

- Includes ultra-thin, layered or very thick nonwovens

- Multi-scale raw materials enable
  - technical textiles
  - commodity products
  - composite applications
  - interior decoration
  - hybrid products
Bridging across the length scales with raw materials

- Polymers
- Natural fibres
- Staple fibres
- Filaments
Modern methods

• Foam quality is chosen based on application and used raw materials
  – possibility to vary air content, bubble size, viscosity,…

• Nonwoven properties are controlled by fibre entanglement
Results

- Density 150–300 kg/m$^3$
- High extensibility
- Strength 0.2–2.8 MPa
- Homogenous structures even below 10 g/m$^2$
- Layering by one forming operation only
- Embedded functional fibres
Scale up: SAMPO pilot at VTT Jyväskylä

1. Making foam & mixing fibres
2. Removing foam with vacuum
3. Drying