INNOVATION DAY 2013



FRPs solving the demands from the modern society

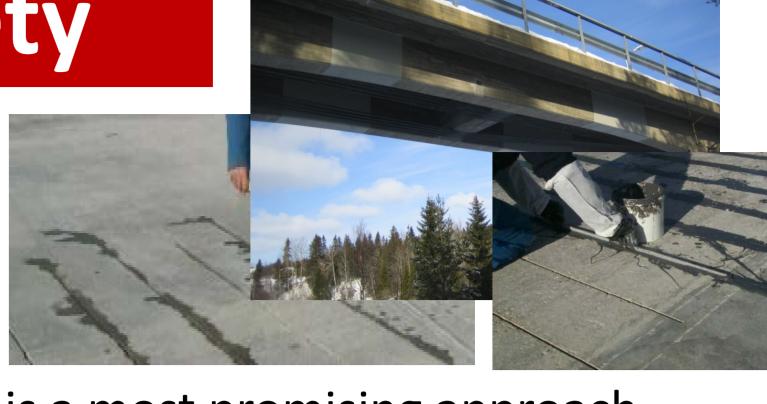
Jacob W. Schmidt (Associate Professor)
Per Goltermann (Professor)
Kristian Dahl Hertz (Professor)











FRPs (Fibre reinforced polymeres) of high strength, low weight and high durability as reinforcement is a most promising approach when solving the challenges of upgrading, repairing and expanding existing structures. Also this material can be used to creating new advanced maintenance free structures. Developments of new materials and new design methods are vital for achieving the goal of reducing construction time, costs and CO₂ emissions

Repairing and upgrading of the infrastructure

- Deteriorating structures
- Increasing traffic loads
- The transport patterns have changed
- •Larger part of the population lives in the large cities.

The consequence

- Maintaining and upgrading of existing structures
- faster construction methods
- increased capacity demands
- methods to reduce the traffic delays
- Cost efficient and sustainable solutions

Maintenance free structures

- Reduced need for maintenance
- Reducing future costs related to the infrastructures
- Bridges and tunnels.
- Buildings, halls, off-shore structures, wind mills etc.

The consequence

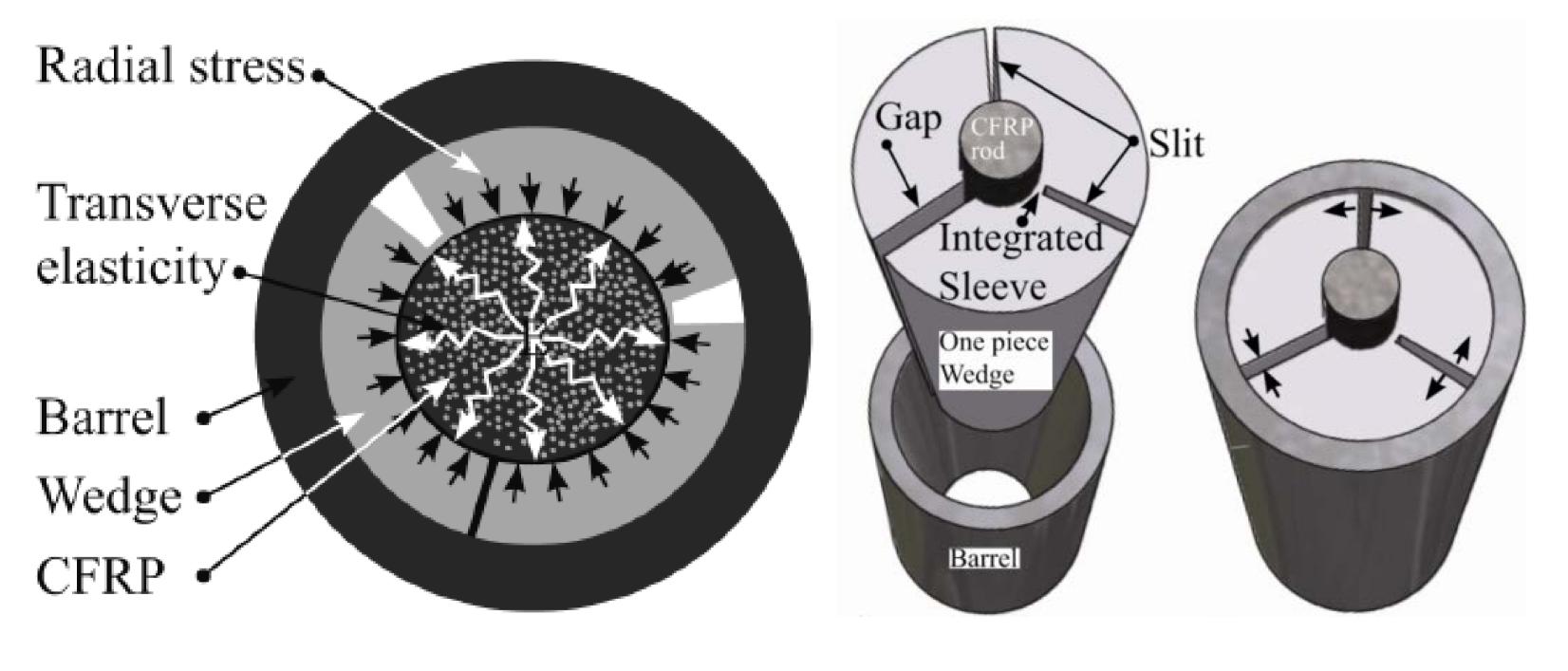
- Reduce the use of materials, weight and stiffness.
- Challenge the structural materials tremendously.
- Large forces has to be transferred through narrow areas
- Extensive exposure of the materials.
- Structural areas has to be well documented

EU use 1.5% of its GDP on maintenance, operating of infrastructure. The city population in the UK is expected to rise from 79% (1950) to 92% (by 2030), in France from 54% (1950) will rise to 83% (by 2030) and in China from 13% (1950) to 61% (by 2030)

Research and improvements on FRP anchorage and connections

Extensive improvements and research is needed to ensure high safety demands, long term performance (50-100 years), low inspection needs - as a civil engineering structure is difficult to access, repair or replacement without causing major traffic delays

Novel anchorage method and full scale testing





State of the art anchorage- and connection testing

