UNIVERSITEIT GENT

SET GHENT UNIVERSITY | SUSTAINABLE ENERGY TECHNOLOGIES

Jeroen De Maeyer

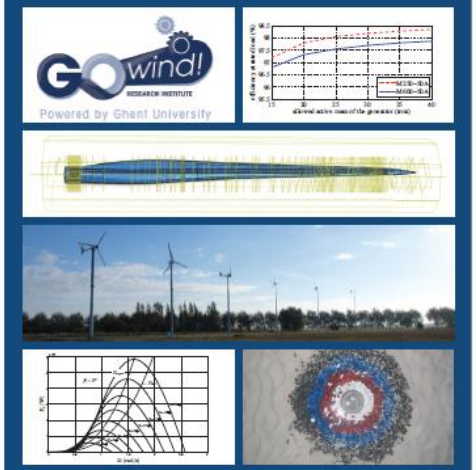
SET mission

"To turn excellent technological research results into industrially relevant, innovative solutions for energy challenges contributing to the creation of a sustainable society"

RENEWABLE ENERGY SYSTEMS

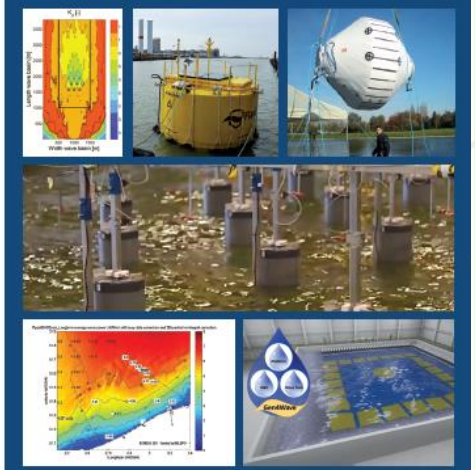
ENERGY EFFICIENCY

Wind Energy



- FEM of blades
- Condition monitoring
- Electrical generator design
- Grid connection & integration
- Small wind turbine field lab
- Scour protection

Blue Energy



- Resource analysis
- Wave energy converter concepts
- Floating body behaviour
- Wave impact simulation
- Wave farm simulation
- PTO design, simulation and grid connection

Industry

- Design, evaluation & control of electro-mechanical drive train components and systems
- Waste heat recovery systems
- Thermal storage components
- Internal combustion engines
- Energy management of industrial parks

Built Environments

- Performance prediction & evaluation
- Heat, air and moisture transport
- Use of HVAC systems
- Control of (micro) grids
- Power quality of low & medium voltage grids
- Urban transport systems

Our focus – way of working

1. Components

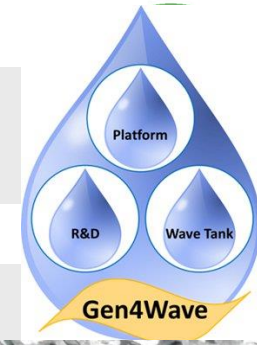
2. Systems
3. Networks

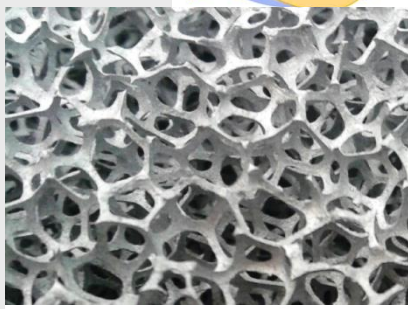
APPLICATIONS	RENEWABLE ENERGY SYSTEMS		ENERGY EFFICIENCY	
	Wind Energy	Blue Energy	Industry	Built Environments
Electromechanical drive train components	x	x	x	
Maritime technology	x	x		
Mechanics of composite materials		x		
Wave farm modelling		x		
Hydrodynamics		x		
Fluid structure interactions	x		x	
Fluid mechanics			x	
Internal combustion engines			x	
Energy management in business parks			x	
Waste heat recovery systems			x	
Thermodynamics			x	
Heat and mass transfer			x	x
Control of electrical grids			x	x
Energy storage			x	x
Building envelope performance prediction and evaluation				x
Control theory	x	x	x	x

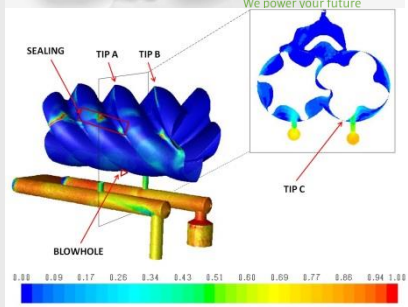
Project ideas/offerings

- Gen4Wave
  - Creating and supporting a value chain wave&tidal energy
- COMPOHEX
  - Heat exchangers made out of polymer/composite materials e.g. for waste heat recovery applications
- High speed energy efficient electrical machines
  - CHPs, spindles, compressor/expander applications, flywheels for energy storage … .
- Low speed Internal Combustion Engines
- Thermal machines (expanders/compressors)
- Monitoring of building performance and indoor air quality
- Share infrastructure, e.g. u-grid lab

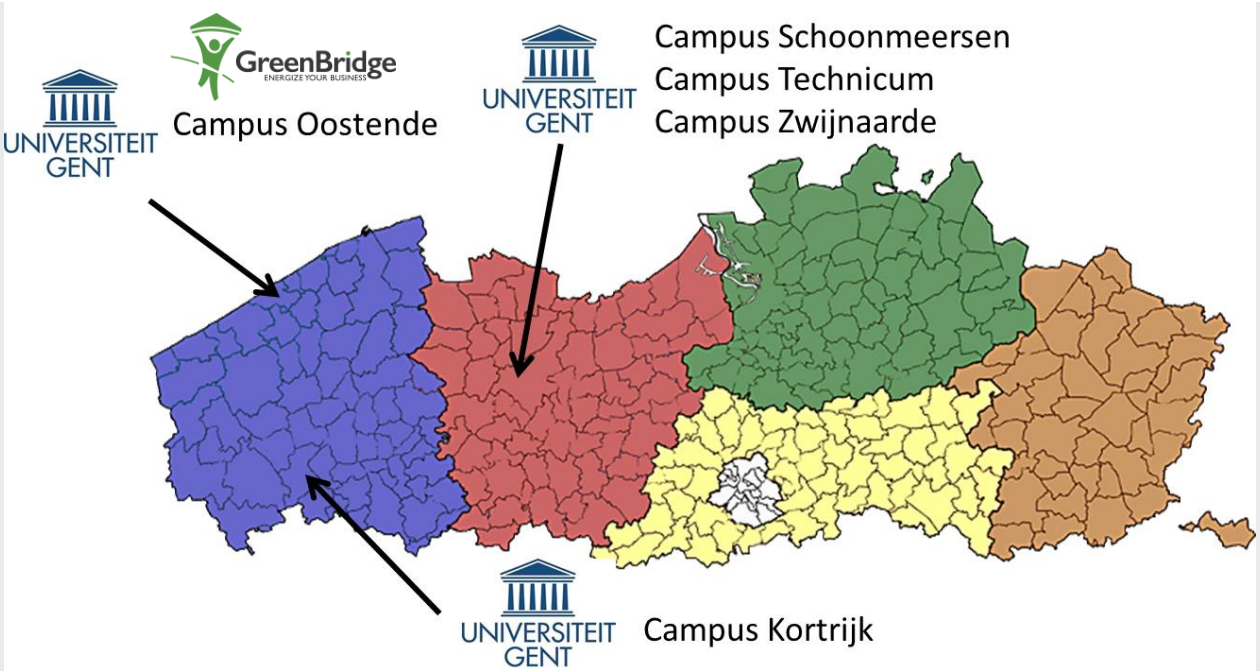
… framework MSC – ETN?







Contact



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