

Centre for Energy Technology



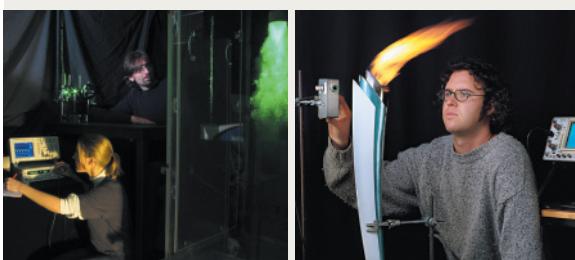


CENTRE FOR ENERGY TECHNOLOGY

The Centre for Energy Technology (CET) under the leadership of its Director, Professor Graham 'Gus' Nathan, harnesses research expertise from across the University of Adelaide to address society's need for clean energy solutions. Supported by the Environment Institute and Institute for Mineral and Energy Resources, its multidisciplinary expertise spans engineering, mathematics, chemistry, physics and environmental sciences.

CET recognises that a key to realising a clean energy future is the development of technologies that make the transition cost-effective. Hence the Centre seeks to identify, develop and support the implementation of such technologies by undertaking innovative and outstanding research, technology development and consulting activities in partnership with industry, government and the community.

Members of the Centre are internationally recognised for their leading research into clean energy technologies and practices that reduce emissions, increase energy efficiency and decrease the cost of energy. With a wide range of facilities spanning laboratory to pilot-scale, our team of researchers are pledged to creating a culture of research excellence and delivering significant breakthroughs in the development of innovative technologies for a clean energy future.



UNIQUE FACILITIES

Experimental facilities include advanced laser laboratories, wind and water tunnels, pilot-scale test rigs and instrumentation.

COLLABORATION

The Centre collaborates with industry, government and other research institutions to develop clean energy technologies.

KEY RESEARCH CAPACITIES

The Centre is committed to accelerating the transition to a low-cost clean energy future. The technologies in which the Centre has established core research capacity include:

Innovative combustion technologies

MILD and ultra-lean pre-mixed combustion, Gyrotherm® kiln burners employing our Precessing Jet technology, dewatering technology for lignites, burner design and optimisation for mineral processing, artistic and ceremonial burners.

Alternative fuels

The clean combustion and utilisation of biomass, including wood, waste and other fuels; alternative feed-stocks including micro-algae and agricultural waste streams and their transformation into bio-diesel, ethanol or di-methyl ether.

Energy efficiency

Active and passive flow control of turbulent flows to reduce energy consumption, electrical power quality, conditioning and associated standards; low-cost converter systems.

Geothermal energy

Novel power cycles, thermodynamic analysis, hybrid & integrated technologies, innovative cooling systems, heat-exchanger fouling.

Energy transmission and storage

Hydrogen generation, transport and storage; methanation; distributed generation system integration and control; super capacitor and fuel cell technologies.

System integration, analysis and optimisation

Fusion of alternative energy systems into existing infrastructure and systems; energy market analysis; energy flow analysis and optimisation.

Solar-thermal energy

Thermodynamic cycles; hybrid systems; passive solar powered cooling, refrigeration and heating; water treatment and production using solar energy; thermochemical processing of minerals.

Solar Photovoltaic

Thin film technologies; end-of-life disposal; integration into batteries, system modelling for vehicular and grid connected applications.

Wind, Wave and Tidal Energy

Wind turbine design; aero-acoustics and noise reduction; wind energy potential evaluation; commercial testing, oscillating water column systems, articulated wave energy convertors.

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