Lecturer: Dr Mike Owen	***Email*:**	mikeowen@sun.ac.za
Faculty: Engineering	***Department:*** Mechanical and Mechatronic Engineering	

Division:
Design & Mechatronics / Mechanics / Thermofluids / Renewable Energy

Research field:
Heat transfer, fluid dynamics and thermal energy systems.

General description of research field:
The research aims to contribute to sustainable energy production and use in traditional and non-traditional contexts. There is a strong focus on industrial heat exchangers and cooling towers (dry, wet and hybrid) in particular as these systems directly affect thermal power plant efficiency (fossil-fuelled, nuclear or renewable) and have a strong influence on the energy/water nexus.

Individual topics listed:	**MEng** ***(Structured)***	**MEng** ***(Research)***	**PhD**	**Funding**
1. An integrated solar thermal system for decentralized, small scale desalination / water purification and power generation.		X		Project funding is pending.
2. Design of a passive condenser for an interface evaporation based solar still.		X		

***Specific requirements*:**
Topic 1 is in collaboration with the University of Southampton and is subject to the UK academic schedule. Work will need to begin before the initiation of the 2021 academic year in South Africa (i.e. the student will need to work during December 2020 / January 2021) and the student will need to work closely with researchers from the partner institution.

For both topics, students will benefit from a strong understanding of heat transfer, fluid dynamics and energy systems fundamentals at undergraduate level.