



european society for precision engineering and nanotechnology

Special Interest Group:

**Precision Engineering
for Sustainable Systems**
9th-10th October 2019

University of Strathclyde, UK



Precision machines have long been at the forefront of one industrial revolution after another to enable the turning of ideas into the economical production of physical objects. In all likelihood the emerging Sustainable Revolution could be the start of a new golden age for the planet and humanity.

Whilst there is no shortage of renewable energy systems available at ever-decreasing costs, they are not evolving fast enough to economically transition to a low carbon economy. The purpose of this workshop is thus to bring together people from academia, industry, and government to share experiences with using precision engineering principles to help develop new ideas and manufacturing systems to reduce production and ownership costs.

Areas of interest include automated precision production of components and systems ranging from manufacture of solar cells and panels to their installation and maintenance; to ever larger wind turbines on and offshore including in-situ manufacturing of ever larger elements; to energy storage systems from batteries to hydro power systems.

We are seeking papers in **Precision Engineering for Sustainable Systems** in the following categories:-

1. Wind

- a. Actuators, gearing, and controls
- b. Blades and materials
- c. Towers

2. Storage

- a. Hydro
- b. Flywheel
- c. Battery
- d. Thermal (including geothermal)

3. Solar

- a. Concentrating Solar Power (CSP)
- b. Photovoltaics (PV)

4. Oceanic

- a. Wave
- b. Tidal
- c. Off-shore Wind
- d. Automated aquaculture and mineral harvesting

For each of these areas, how can production and quality be increased while lowering costs and increasing quality? Can precision production methods from other industries, such as directional drilling from the oil and gas industry, be economically evolved to enable geothermal energy systems to become a preferred system for heating and cooling? Also of great importance is symbiotic systems such as aquaculture collocated with offshore wind, ocean harvesting of minerals, and desalination with seawater pumped storage hydro systems.

Please visit our website for further information.