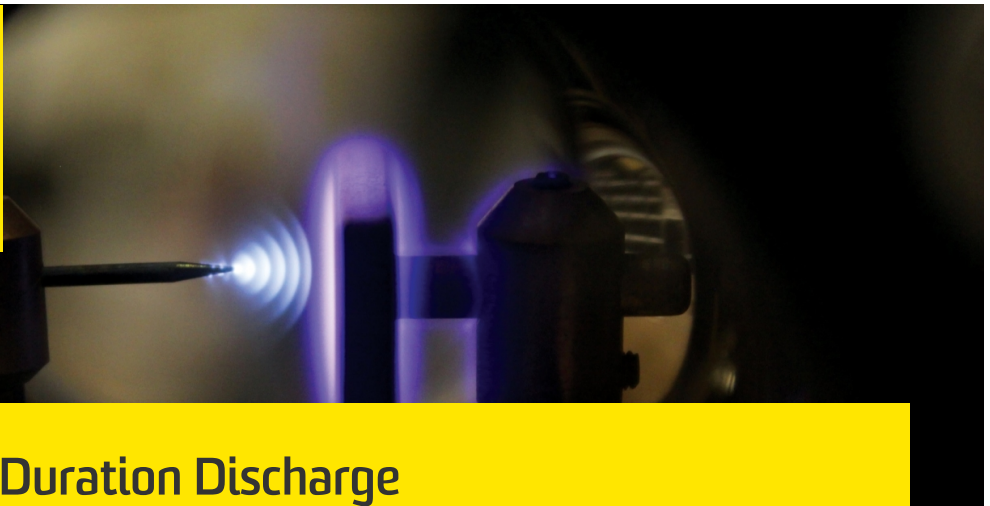




UNSW
SYDNEY



Pulsed Nanosecond Duration Discharge

Nanosecond-duration plasmas for a range of engineering applications.

Competitive advantage

- Technologies developed for the generation of nanosecond-duration plasma discharges. These plasmas can operate at very high voltages while maintaining cold plasma characteristics, as the pulse duration is too short for the plasma to transition to a spark under some conditions
- Laser-based diagnostics capable of nanosecond or shorter duration measurements of species concentration, temperature and electric field strength have also been developed

Impact

- These devices have a range of possible applications, including
- Fuel ignition systems
- Sterilisation of medical equipment, foods and liquids
- Destruction of contaminants in water
- Thin film deposition technologies

Successful applications

- Built and characterised nanosecond repetitively pulsed power supplies
- Measurements of temperature and species concentration during and immediately after the pulsed discharge occurs

Capabilities and facilities

- D1.5 nanosecond commercial pulser
- 80+ nanosecond variable duration pulser developed in-house

More Information

Associate Professor Sean O'Byrne

School of Engineering and Information Technology

T: +61 (0) 2 6268 8353

E: s.obyrne@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61 (2) 9385 5008