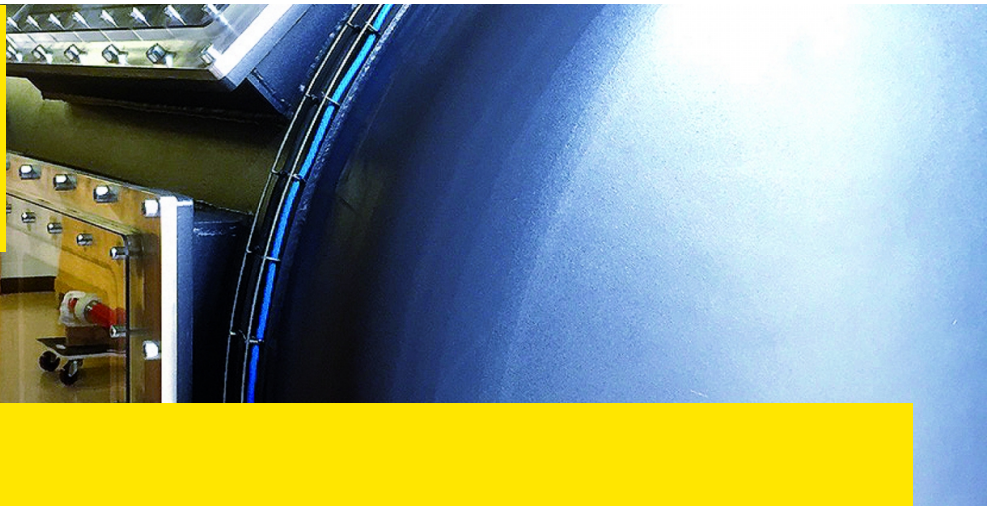




**UNSW**  
SYDNEY



## Impact Dynamics

**Testing the performance and functionality of materials by subjecting them to a range of extreme loading conditions, including shock loading, ballistic loading, dynamic tension, compression and shear. Diagnostic techniques are used to understand the precise impact of extreme dynamic stress.**

### Competitive advantage

- A unique gas-gun capability that can:
- Fire projectiles to velocities of 4500 m/s
- Conduct flyer-plate tests to 'shock' materials
- Launch any projectile shape

### Impact

- Maximise survivability by developing new protective structures for Defence
- Minimise the weight burden on the soldier by developing lightweight durable structures
- Reduce injury by developing a better understanding of the behaviour of the human body to dynamic loading

### Successful applications

- Probing the ballistic performance of a bunker design
- Developing models for armour materials
- Understanding the role of a bullet's jacket during the penetration of hard targets

### Capabilities and facilities

- Split Hopkinson Pressure Bar (compression and tension)
- Instrumented drop-tower for low velocity impact studies
- High-speed photography equipment and laser-based diagnostics
- Flash x-ray
- Computational codes for simulating dynamic events

### Our partners

- Defence Science and Technology
- Australia's Nuclear Science and Technology Organisation (ANSTO)
- DefendTex

### More Information

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