



**UNSW**  
SYDNEY

## Planar Magnetics

**Developing new planar structures and verifying simplified models for both high- and low-power applications, and exploring new, flexible matrices of magnetic components that can be reconfigured online. As the power electronics industry continues to grow and develop ever-smaller power supplies across a range of scales, from consumer electronics through to large electric vehicles, there is increasing demand to miniaturise. Planar magnetics is a space-efficient technology that allows magnetic components to be tightly integrated with their circuit.**

### Competitive advantage

- Novel planar magnetic matrices for flexible power supply systems
- Improved high-frequency transformers and inductors using planar electronics
- Advanced tools for the analysis, design and fabrication of novel magnetics
- Bespoke planar magnetic design and analysis

### Impact

Planar magnetics:

- reduces the cost of integrating magnetic components into mass production
- revises standards that currently underestimate capacity
- improves the performance of magnetic components
- The ability to reconfigure matrices of magnetic components online, brings greater efficiency to transformers and inductors.

### Successful applications

- Applications in solid-state high-frequency transformers
- DC-DC power converters for supercapacitor storage and water treatment applications
- Capabilities and facilities
- Planar magnetics design and analysis tools including finite element modelling
- Test and measurement systems to assess benefits and performance

### Our partners

- Shandong BOFA Power Machinery
- Motorica

### More Information

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