

# Jonathan Knott

Researcher / Engineer / Entrepreneur

Wollongong, NSW  
AUSTRALIA

+61 402 239 509

[jon@joncknott.com](mailto:jon@joncknott.com)

[linkedin.com/in/joncknott](https://linkedin.com/in/joncknott)

[joncknott.com/#portfolio](https://joncknott.com/#portfolio)

## EXPERIENCE

### Interim Assistant Director

Institute for Superconducting and Electronic Materials

SEPT 2021 - PRESENT

Providing day-to-day operations leadership and support for a 100+ person flagship research institute at the University of Wollongong. Responsible for:

- **Managing workplace health and safety** activities for researchers, including **developing** and **approving Risk Assessments** and **Safe Work Procedures** for all research activities
- **Managing** and **coordinating outreach** and **engagement** efforts across a **range of stakeholders**, including **delivering tours** and **producing** multiple **international conferences** and **workshops**
- **Preparing funding proposals** for a range of research- and industry-focused opportunities

### Research Fellow

Faculty of Engineering and Information Sciences, University of Wollongong

FEB 2021 - PRESENT

Working on a DMTC Ltd.-funded project on superconducting devices for naval applications, with partners QUT, DSTg, and Thales Australia. Responsible for:

- **Developing** and **implementing** cutting-edge **simulations** of superconducting magnet coils
- **Developing, sourcing, integrating, commissioning** and **operating** a complex **laboratory testbed** for demonstrating and characterising superconducting coils in solid nitrogen for 'thermal battery' applications
- **Presenting**, contextualizing and explaining project outcomes to a **range of stakeholders** through **reports, publications, presentations, tours** and **posters**
- **Engineering design** for a **superconducting device** for naval applications, including **thermal system** and **shock mitigation** components
- **Preparing funding proposal** for further **multi-million-dollar** technology development and demonstration project

### Node Leader, SafeREnergy Hub

Institute for Superconducting and Electronic Materials

NOV 2020 - PRESENT

Leading and supporting UOW-node activities of a ~\$10M Australian Research Council-funded multi-institution, multi partner research hub on safe and reliable energy storage and conversion technologies. Responsible for:

- **Coordinating** UOW node activities with central SafeREnergy Hub activities
- **Representing** UOW node on SafeREnergy Hub Executive Committee
- **Facilitating contract negotiation** between UOW node, SafeREnergy Hub and UOW **industry partners**

## SKILLS

### Research and Development

- Experiment development
- Literature survey
- Concept scoping and exploration
- Stakeholder reporting

### Communication

- Scholarly publication (15+ published works)
- Reporting (Delivered 20+ Project/Milestone reports)
- Presenting (Conference presentations, regular guest on ABC radio)
- Adobe Creative Suite

### Project and proposal design

- Scoping / activity design
- Stakeholder engagement
- Budgeting, planning, resourcing
- Writing and compliance

### Engineering

- CAD (SolidWorks, Inventor)
- Analysis (COMSOL, Altair, ANSYS, LTSpice)
- Complex system design, construction and operation

### Software Development

- Instrumentation (LabVIEW)
- Data analysis (MATLAB, Python, Jupyter, R)
- System Integration (Python)
- Custom sensing (C++)

### Project Management

- Management and tracking (MS Project, ASANA)
- Resourcing (Led hiring for 5+ positions)
- Budgeting/Finance (Managed \$10.5M project)

## Research Fellow

Australian Power Quality and Reliability Centre, University of Wollongong  
JUN 2020 – FEB 2021

Working on industry-centric projects related to electrical engineering and renewable energy technologies. Responsible for:

- **Managing** the **development, production and delivery** of a 10-topic **professional development course** on power engineering for **Snowy Hydro Ltd.**, including producing a 200-page Reference Guide and ~40 hours of slides for expert delivery
- **Research and Contract Engineering** for **Endeavour Energy** on Stand-Alone Power System (SAPS) site assessment and system deployment

## Director

Upward Manufacturing Pty Ltd.  
SEPT 2017 – JUN 2020

In 2017 I co-founded Upward Manufacturing to provide 3D printing and engineering services, education and outreach to the Illawarra. Responsible for:

- **Delivering** custom **engineering** and product **prototyping services**
- **Developing workshop** and **education curricula** (including NESA-accredited training)
- Delivering **workshop training** (over 150 attendees in total)
- **Strategic planning, product development and business management**
- **Selecting, sourcing, commissioning, and maintaining** a range of FDM and SLA printers, 3D scanners, IT and other hardware

## Project Manager / Research Fellow

Institute for Superconducting and Electronic Materials  
MAR 2015 – JUN 2020

Project managing and working on the \$10.5M Smart Sodium Storage System (S<sup>4</sup>) Project. Responsible for:

- **Leading** the **negotiation** of the **\$2.7M Funding Agreement** with ARENA, included writing detailed Milestone Deliverables
- **Leading** the development and execution of the **five-way Consortium Agreement** with national and international partners
- **Negotiating, purchasing, deploying and commissioning** of over **\$250k in CAPEX** equipment – including developing engineering solutions to allow a number of complex systems to be integrated within the ISEM;
- Playing a major role in the **engagement** of **nine Research Fellows** and **six HDR students** – including **writing position descriptions**, liaising with UOW HR, being a panellist for multiple selection committees
- **Writing and delivering** nine major **Milestone Reports** to ARENA totalling over 700 pages of content – including developing detailed **technical reports, financial statements and administrative reports**
- **Engineering and developing** a full **Energy Management System (EMS)** for **renewable generation and storage**, including integrating multiple commercial inverters and other data sources with **innovative prediction and control algorithms**

## EDUCATION

### PhD

University of Wollongong  
NOV 2017

Candidature undertaken with an **industry partnership**. Developed the **world's first magnesium diboride-based saturated core FCL**.

### Grad. Cert. Innovation

Sydney Business School  
JUL 2015

Awarded a **full scholarship** to this program, delivered by the *Sydney Business School* and the *ARC Centre of Excellence for Electromaterials Science*.

**BSc** (Physics) /

**BE** (Mechatronics) (Hons.)

University of Wollongong  
DEC 2009 / DEC 2008

Awarded the *Sir William Tyree Work-Integrated-Learning Scholarship* in my third year, and **subsequently employed** by Tyree Transformers

## AWARDS & ACTIVITIES

### DMTC Capability Improvement Award

APR 2022

### 'Top 10' paper at OZWater'18

MAY 2018

#### Member

Institute of Electrical and Electronics Engineers (IEEE)

#### Member

Association for Tertiary Education Management (ATEM)

#### Elected Member

UOW Academic Senate

#### Elected Member

UOW Workplace Diversity Reference Group