Extrusion Facility for the Development of New Lightweight Alloys and Structures

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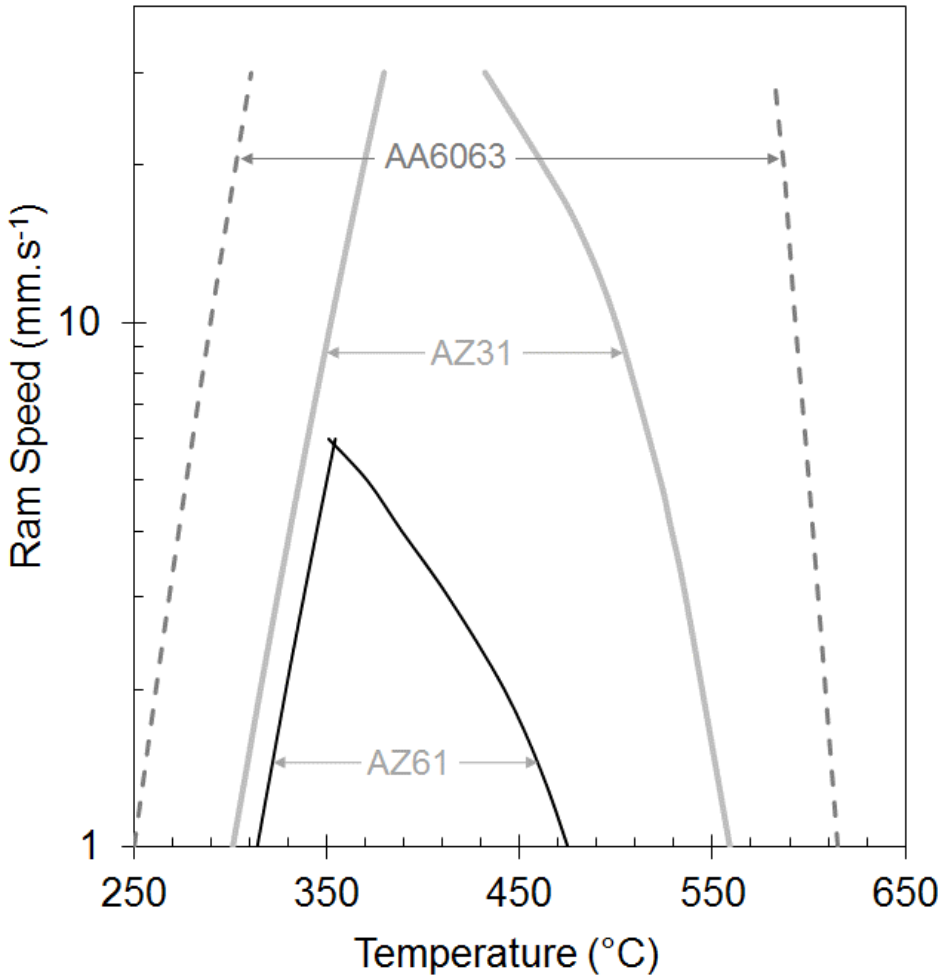
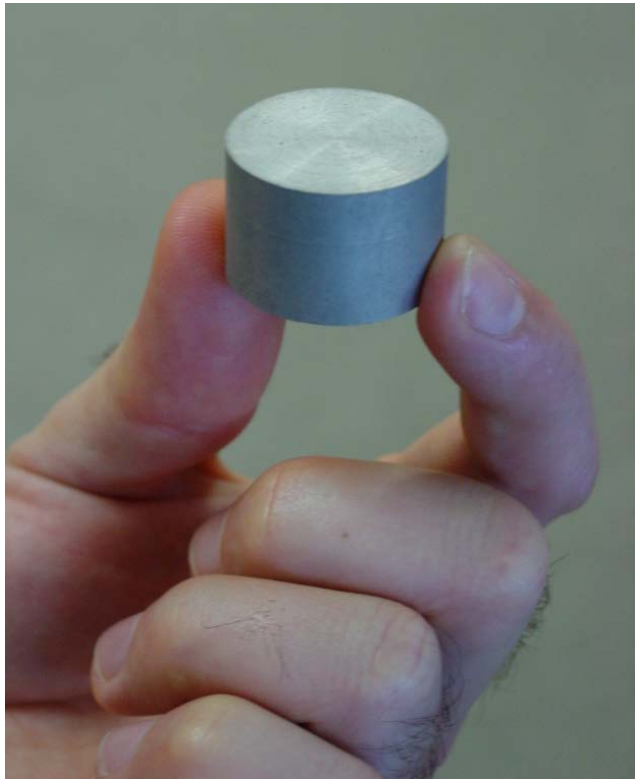
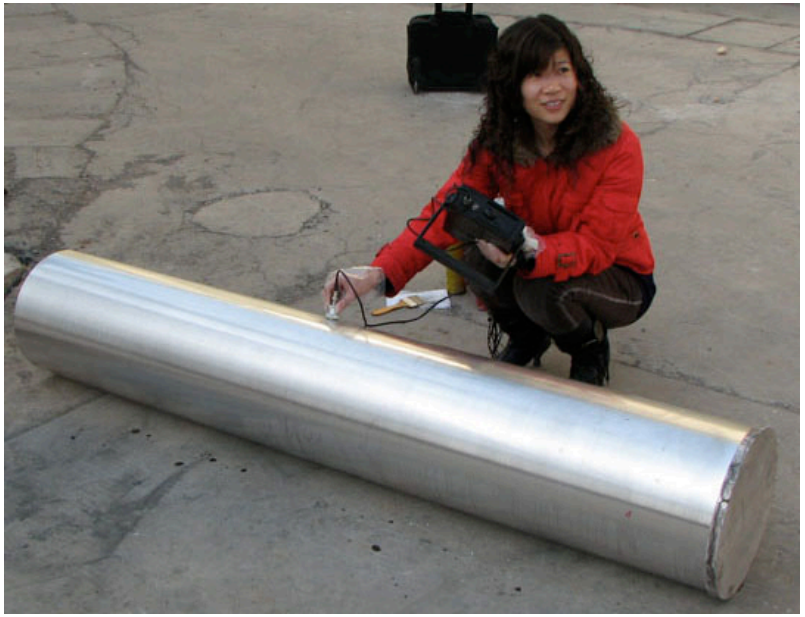
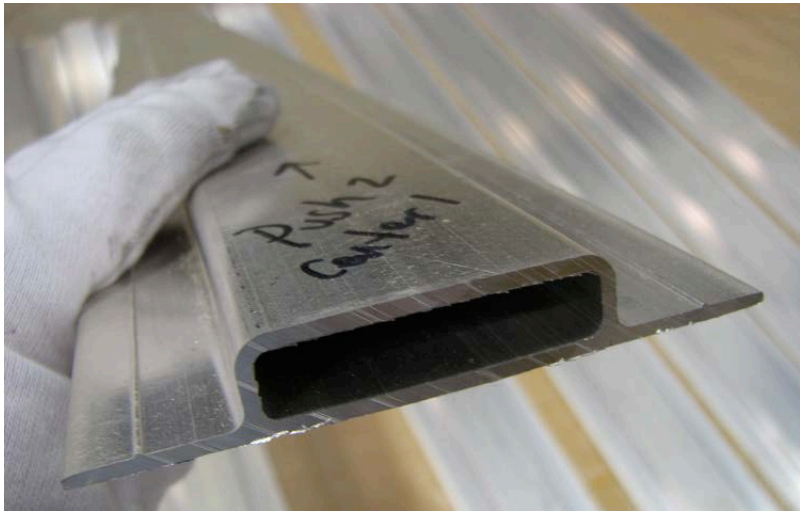
Early Days....



Issue of Scalability







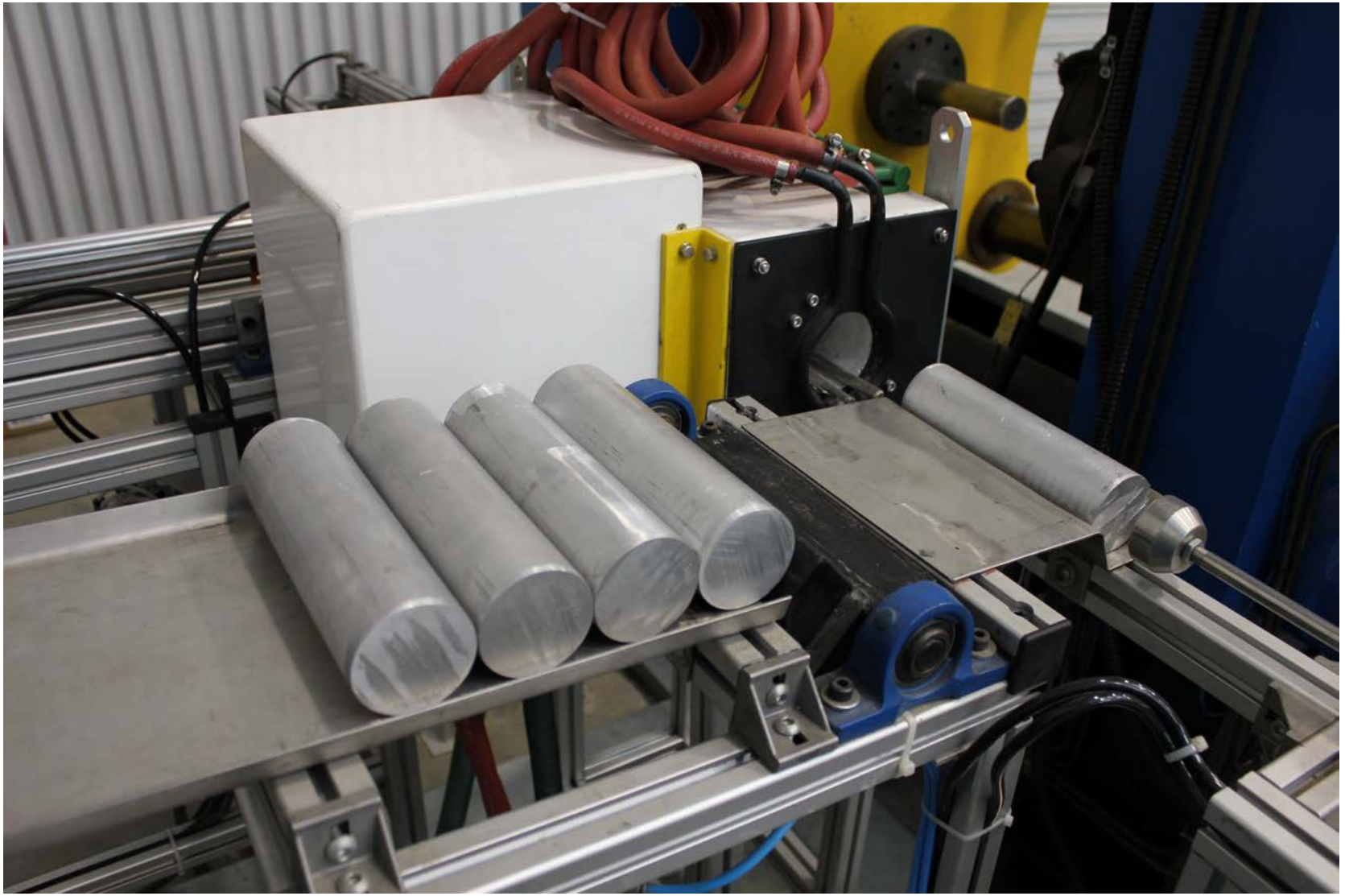
New Extrusion Facility

- Successful ARC LEIF grant ($430K from ARC)
- To establish Australia's only large scale research-dedicated extrusion facility

DEAKIN UNIVERSITY AUSTRALIA
MONASH University
UNSW THE UNIVERSITY OF NEW SOUTH WALES
THE UNIVERSITY OF QUEENSLAND AUSTRALIA
CAST
Australian Government
Australian Research Council

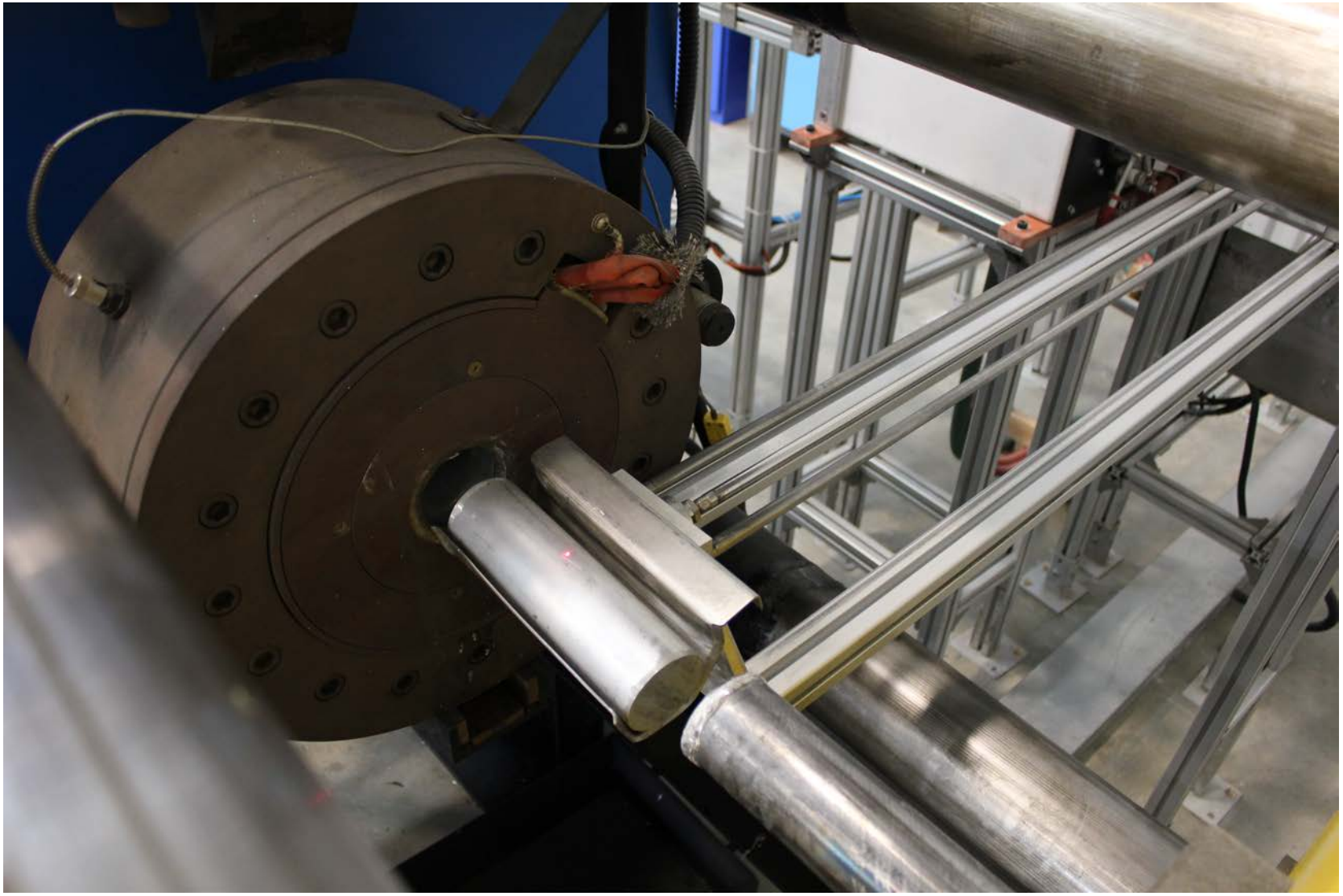
New Extrusion Facility

Induction Heater / Billet Loader



Extrusion Press

Extrusion Press



Quenching Unit

IR Pyrometers

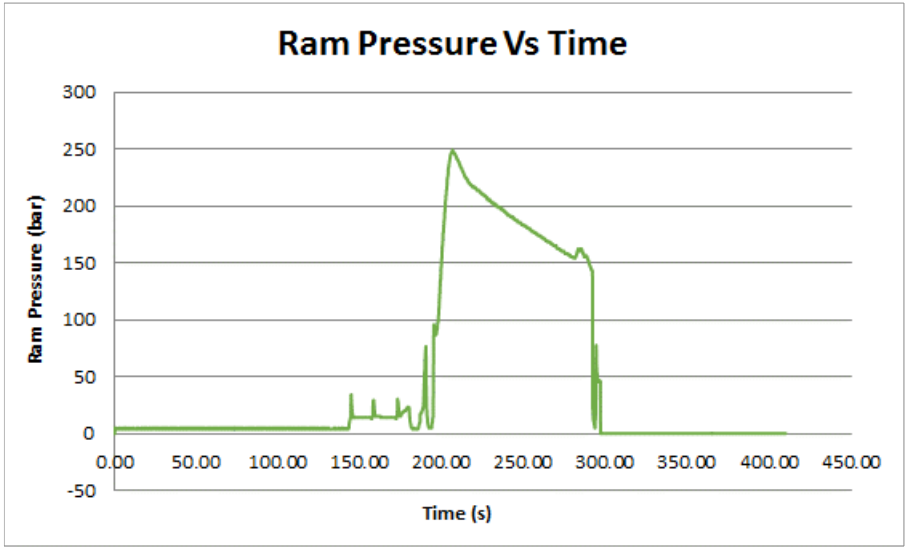
Run-out Table and Puller

Ageing Oven

Dies / Profiles

Data Capture

- Logs 15 variables per extrusion:
  - Time
  - Ram Position
  - Ram Pressure
  - Temperature
  - Puller position

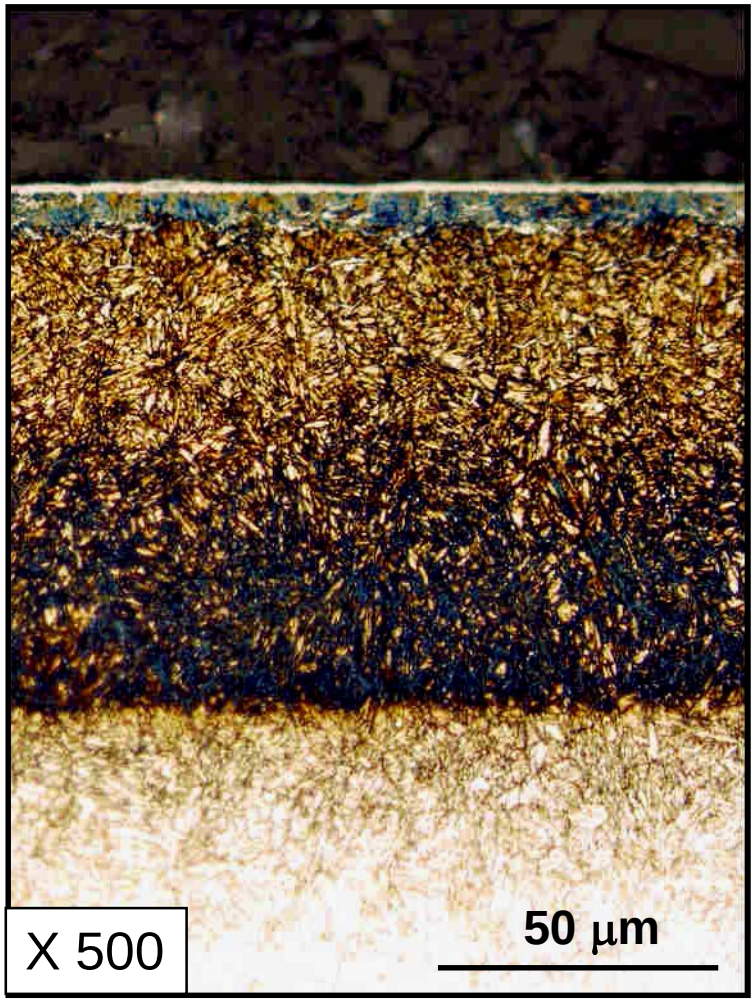


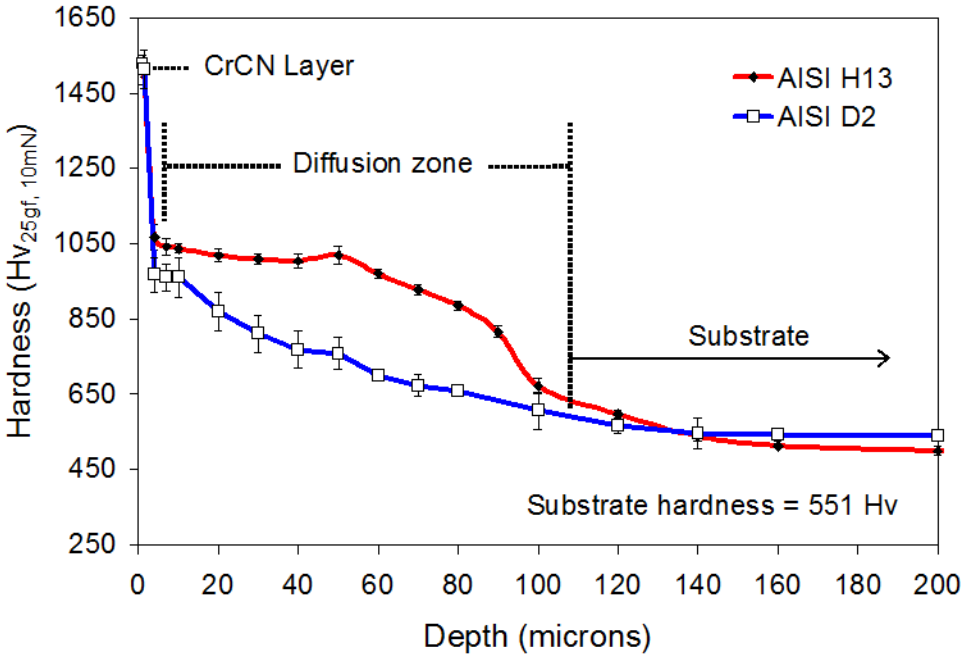
Supported Research Activities

- Al and Mg Alloy Development
  - high speed extrusion alloys
  - high strength alloys
  - compositional effects
- New metal-matrix composites
- New micro-truss structures
- New powder-base metals for structural and biomedical applications

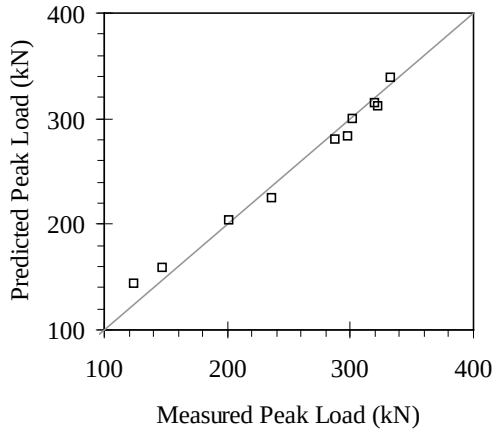
New Die Coatings

Duplex Surface Treatment

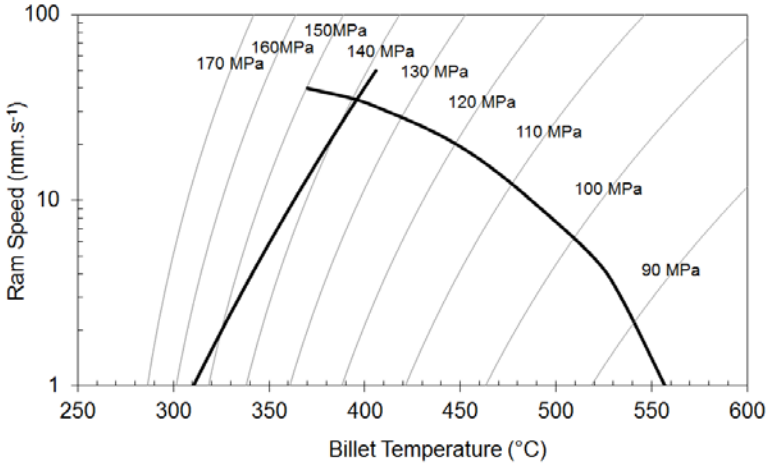




FE Modelling



Predict Extrusion Loads



Predict Mechanical Properties

Thankyou

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