Al-Si-Cu-Mg alloys are used in the automotive industry to produce engine blocks and cylinder heads. Recycled Al metal is a cheaper and environmentally friendly way to make these alloys than using the primary Al metal; the secondary metal production consumes only 5% energy of the primary metal production.

The challenge in using the secondary metal when producing the alloy is, the high level of Fe impurity causes detrimental effect on mechanical properties and microstructures: High level of Fe produces long and needle-like brittle intermetallic phase particles. This happened at the early stage of the solidification and hence it blocks the feeding mechanism during casting as well.

Increasing the Si level to about 9 w.t.% to these alloys reduces the detrimental effect of Fe by producing fine intermetallic particles in the microstructure. The mechanism responsible for the beneficial effect of the high Si, in these alloys will be discussed.

Tharmalingam graduated with his Bachelor degree from University of Jaffna (2003) followed by his post graduate degrees from University of Peradeniya (2006), University of Surrey (2008), TAFE NSW (2009) and University of Queensland (2012). Tharmalingam commenced his PhD study at UQ in 2010 under the supervision of Prof Carlos H Caceres and A/Prof John Taylor, with the full financial support from CAST CRC Ltd.

When
Friday, 22nd November 2013, 3-4pm

Where
49-502 Advanced Engineering Building, St Lucia

School of Mechanical and Mining Engineering

All interested persons are invited to attend
The seminar is free of charge – no RSVP is needed
Enquiries – Phone 3365 3714