BAMI Seminar – August 2016

***Technical Review Meeting** will be on Friday 26th August 2016**

Mahmud Kibria, PhD Student, Department of Chemical Engineering, Monash University

Friday 12th August 2016, 12.30PM to 1.30PM
Room G03, BioPRIA, 15 Alliance Lane (Building 59), Clayton Campus

Moderator: Pramod Sripada, PhD Student, Department of Chemical Engineering, Monash University

Single Particle Direct Gasification Model: Theory and Experiment

Abstract:

A mathematical model to understand the fate of a single spherical biomass particle of 90 microns in direct CO2 gasification under entrained flow condition is developed. Thermogravimetric data of pine bark as biomass is used in the model. The model is based on a heat balance by solving a set of nonlinear equations, describing the reaction rates, transport properties of the reacting/evolved gases, mass transfer mechanism in the boundary layer region and the system Reynolds number of the reactor. The mass transfer is assumed to be in the boundary layer region while the boundary layer thickness varies with time, temperature and the properties of the gases. The volatile evaluation and heterogeneous reaction on the particle surface is modelled to occur parallel. The char consumption mechanism is considered both chemical and pore diffusion controlled depending on the fate of the gasifying particle.

Presentation and Q&A session will be from 12.30PM – 1.00PM. Lunch will be served at 1.00PM.

Enquires: BAMI Student Chapter coordinators Anurag Parihar or Jinhuo Dai.