



## BEST PRACTICES



### Background of Company

Lucite International Singapore Pte. Ltd. (LISPL) is a part of the Mitsubishi Rayon Lucite Group of companies. LISPL operates the 'first in class' Alpha MMA process for manufacture of Methyl Methacrylate (MMA). The plant, which is located in Sakra on Jurong Island was successfully commissioned in 2009.

This is a notable achievement widely recognised in the industry given that the plant in Singapore followed a 25000:1 scale-up from a micro-pilot plant. It is all the more notable given that the technology employed used two completely new catalytic steps and a number of novel separation processes. The Heat Recovery Phase II project is the first major capital investment on the plant since its commissioning.

### Project Description

#### Heat Recovery Project Phase II Alpha MMA Plant

The Heat Recovery Phase II Project at LISPL commissioned in Q4 of 2015 allowed for recovery of significant energy previously consumed in one part of the Alpha MMA process. This energy recovery was achieved through the implementation of direct mechanical vapour compression. One of the process streams was compressed and this allowed its condensation characteristics to be altered such that the energy contained within that stream could be used to provide heat elsewhere in the process. This was the first time such a heat recovery technology had been used on the Alpha MMA process and its successful commissioning provided a significant improvement in the energy efficiency of this process. Technology design for the project was done in collaboration with Lucite's Strategic Projects Group in Wilton UK with front-end and detailed engineering and construction management done with Jacobs UK and Singapore.

### Results

Substantial annual energy savings of about 820 TJ were achieved for this project.

