ABSTRACT OF THE DISCLOSURE

TITLE OF INVENTION: **OPEN LOOP MIXED REFRIGERANT CYCLE FOR ETHYLENE RECOVERY**

Refrigeration is provided in an ethylene recovery plant by an open-loop mixed refrigeration cycle which utilizes components present in the ethylene-containing feed gas as the mixed refrigerant. Refrigeration is provided by subcooled mixed refrigerant at -175° to -225°F for the demethanizer overhead condenser and for initial cooling and condensation of the ethylene-containing feed gas. Overall ethylene recoveries of up to 99.9% can be achieved at reduced power consumption compared with conventional ethylene recovery cycles. In addition, significant capital savings can be realized due to the simplification of equipment with the open-loop mixed refrigerant cycle, which can be operated advantageously at pressures between 150 and 400 psia.

Figure 2 of the drawings should accompany the abstract when published.