ABSTRACT OF THE DISCLOSURE

TITLE OF THE INVENTION:

AIR SEPARATION WITH INTERMEDIATE PRESSURE VAPORIZATION AND EXPANSION

A double column cryogenic air separation system is operated to increase boilup in the lower pressure column by vaporizing at an intermediate pressure a liquid stream containing at least 20 mole% oxygen, work expanding the stream, and introducing the resulting expanded stream into the lower pressure column. Operation in this mode increases oxygen recovery at a given rate of compressed and purified air feed or reduces the amount air feed required to produce a given rate of oxygen product. Argon recovery can be integrated efficiently with the intermediate pressure vaporization and work expansion steps.

(Figure 3)