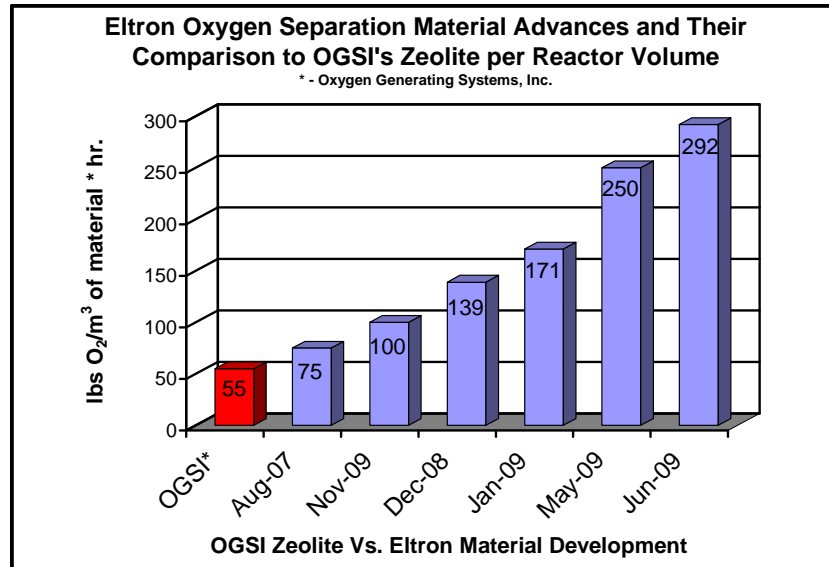


Thermal Swing Oxygen Generation

Eltron Research & Development has developed a non-cryogenic, thermal swing oxygen generation system capable of absorbing large quantities of oxygen from air and then releasing that oxygen when heated to modest temperatures (<550 °C). The strong preference our materials possess to bind only oxygen eliminates the need for an additional argon separation unit like those needed for current PSA systems designed for high purity oxygen (>95%) applications. Furthermore, our materials are not affected by humidity in the air feed stream which eliminates the need for an elaborate pre-reactor air conditioning and purification unit. Massive strides in development over the last two years has led to our current primary material which is capable of generating more than five times as much oxygen per volume in our process than zeolite materials used in current PSA systems (**See Figure**). This increase in production reduces overall reactor volume and associated capital costs. This technology is expected to compete strongly with current PSA and VSA systems during the initial phase of development while continued optimization should yield a system capable of competing with small to mid-size cryogenic oxygen separation technologies.



Stage of Development

Eltron is currently constructing a scaled-up reactor system incorporating two beds that is projected to produce ~10 lbs of oxygen per day. The beds will be of entirely different construct in order to determine which design is most favorable, from both an economic and efficiency point of view, for scaled-up production. Eltron's primary material has currently been tested through over 8,500 continuous cycles without any drop-off in performance. New materials are also being investigated which show promise of surpassing the performance of our current primary material.

The technologies described, and all related inventions are owned by Eltron Research & Development Inc, and protected by copyrights, trademarks, issued and pending patents, trade secrets, or other applicable intellectual property rights.

Contact Us

To discuss the possibility of entering into a business relationship with Eltron, contact the Business Development Group at business@eltronresearch.com.