OAK RIDGE NATIONAL LABORATORY
Managed by UT-Battelle for the Department of Energy

Liquid Compressor and Expander Machine with Heat Exchange Capabilities for Energy Storage Applications

Disclosure Number

201603635

Technology Summary

The invention relates to energy storage and more specifically to a system for storing energy during times of low demand and releasing energy during times of high demand. This invention employs a novel gas compression method that reduces compression work by 30%. The novel method relies on constantly cooling the gas as it is being compressed. The resulting process nears isothermal compression, thermodynamically the most efficient compression process. The energy stored in the compressed gas can then be extracted in the form of electricity. This is done by using the compressed gas to push water through Pelton turbine that in turn spins a generator.

Inventor

MEHDIZADEH MOMEN, AYYOUB
Energy & Transportation Science Division

Licensing Contact

SIMS, DAVID L

UT-Battelle, LLC

Oak Ridge National Laboratory

Rm 124C, Bldg 4500N6196

1 Bethel Valley Road

Oak Ridge, TN 37831

Office Phone: (865) 241-3808

E-Mail: SIMSDL@ORNL.GOV