



**Steven E. Rizea, P.E.**

University of Central Florida  
University of Florida  
Licensed Mechanical Engineer  
Member ASME and IDEA

Currently - Modeling of Air Lift Subsea Mining System

- Update, validate and operate a legacy air lift computer models

10 years as Senior Mechanical Engineer

- Modeling and optimizing cooling energy conservation technologies, and the cost estimating algorithms
- Update, validate and operate legacy seawater air conditioning computer models
- Create cost estimates for construction, maintenance, and overhaul of system components. Compile technical and economic results into reports and communicate them effectively to both technical and non-technical readers.
- Develop preliminary designs for OTEC plant power modules, including heat exchangers, working fluid piping, working fluid pumps, structure, and capital cost
- Create, debug, maintain, and operate a technical and economic OTEC computer model
- Participate in the overall design of deep marine intake pipelines.
- Design marine pipeline anchoring components; produce construction-ready drawings.
- Model marine pipeline deployment and anchoring, accounting for bending, internal pressure, tension, environmental loads, and corrosion.
- Carry out preliminary design and naval architecture of a submersible anti-neutrino detector.

**Patents**

Van Ryzin, Joe, Rizea, Steven. 2014. Ocean thermal power system. U.S. Patent 8,776,519, filed August 1 2014 and issued July 15 2014.

Van Ryzin, Joe, Rizea, Steven, Landherr, Adam. 2013. System for relieving stress at pipe connections using an external sleeve. U.S. Patent Application 14/046,744, filed October 4, 2013. Patent Pending.

## **Publications**

Van Ryzin, J., Grandelli, P., Argall R., Rizea, S.E. *Ocean Thermal Energy Conversion: The Cost Challenge*. In: The 2009 Offshore Technology Conference; 2009 May 4-7; Houston, TX.

Eldred, M, Van Ryzin J, Rizea, S.E., et al. *Heat Exchanger Development for Ocean Thermal Energy Conversion*. In: The 2011 Oceans Conference; 2011 September 19-22; Honolulu, HI.

*Rizea, S. Optimization of ocean thermal energy conversion power plants. (Master's thesis). 2012.*