



**PRESSURE VESSEL RELATED SERVICES:**

- **Pressure Vessels, Heat Exchangers, Tanks**
- **Oil & Gas, Power, Chemical, Petrochemical, Fertilizer etc.**
- **Engineering Design and Training Services**



## Vision Statement

**Be the preferred global organization to provide professional engineering, procurement and construction services for new industrial projects, continuing support services for existing industrial facilities, and offer workforce development and career enhancing learning and development programs for individuals and organizations.**

CoDesign Engineering provides a wide range of engineering services for pressure vessels, heat exchangers and tanks piping for several industries including but not limited to oil & gas, power, chemical, petrochemical, and fertilizers with a mission to achieve engineering excellence, customer satisfaction and innovative solutions. We pride ourselves on providing high quality services to our clients that address our client's specific needs to enable them to optimize their resources.

It is becoming less practical for many companies to maintain an in-house engineering staff. That is where we come in - whenever you need us, either for one time projects, or for recurring engineering services. We understand the codes and standards, and can offer a range of services for the safe design and manufacture of pressure vessels, heat exchangers and tanks. Our engineering team is comprised of an experienced and cross-trained staff.



## *Engineering Consultancy Services*

We provide mechanical design of pressure vessels, heat exchangers (including thermal design as well) and tanks as per ASME and API codes and TEMA standards along with shop drawings for all possible configurations. Additionally, we also provide a range of related engineering services for such equipment. Our services include:

- Thermal design and rating of shell-and-tube heat exchangers using HTRI program
- Mechanical design and analysis as per ASME Section VIII, Divisions 1 and 2, and TEMA standard
- Finite element analysis for complex pressure vessels, heat exchangers and their components
- Fatigue analysis to calculate fatigue life of pressure vessels and heat exchangers
- Fitness-for-service evaluations for pressure vessels and heat exchangers to assure structural integrity of equipment
- General arrangement drawings and detailed fabrication drawings
- Code compliance evaluation, resolution of technical issues and support for repairs and replacement
- Evaluation and development of preventive and predictive maintenance programs



- Preparation of pressure vessel specifications and bid evaluations, administration of contracts, and coordination with owners and vendors
- Assistance to pressure vessel manufacturers preparing the Quality Control Manual and in obtaining ASME “U” and “R” stamps

### ***Commercial Software Used***

Pressure Vessel Design - PV Elite, Compress

Finite Element Analysis – Creo (Pro-Engineer), Inventor, ANSYS

Computer-aided Design - AutoCAD

Heat Exchanger Design - HTRI, Aspen B-JAC



## *Training Services*

CoDesign Engineering specializes in providing training services for design and fabrication of pressure vessels, heat exchangers and tanks used in various industries, and the ecosystem that includes piping, welding, valves, process improvement, and engineering management. Some of the courses (lasting from two days to five days) that we provide include,

- Design and Fabrication of ASME Section VIII, Div. 1 Pressure Vessels
- Design and Fabrication of ASME Section VIII, Div. 2 Pressure Vessels
- Shell & Tube Heat Exchangers - Thermal and Mechanical Design
- API 650 Tanks
- Pressure Vessel Materials
- Pressure Vessel Inspection as per API 510

We also provide several distance learning courses:

- Pressure Vessels
- API Tanks
- Shell & Tube Heat Exchangers

**More courses will be added to the mix as and when they are ready.**



# CoDesign Engineering LLC




## *About CoDesign Engineering*

Codesign Engineering was founded in December 2009, and is now headquartered in Houston, with additional office in Mumbai. This offers us the advantage of being able to mobilize resources in a very cost effective manner at a short notice. All offices are equipped with state-of-art tools and experienced staff to execute projects of varying magnitude and complexity. The training, design and consultancy activities for pressure vessels, heat exchangers and tanks were started in July, 2012.



**Ramesh Tiwari** is an ASME member and an internationally recognized specialist in the area of pressure vessels, heat exchangers, tanks, materials, and codes and standards. He holds Bachelor's and Master's degrees in mechanical engineering from universities in India and United States. He is a registered Professional Engineer in the State of Maryland in the United States. Ramesh is a member of ASME Section VIII

Subgroup on Heat Transfer Equipment, and a member of ASME International Working Group on B31.1 for Power Piping in India. In this capacity, he has made invaluable contribution in resolving technical issues in compliance with the ASME codes, as well as API standards (as they apply to tanks). Ramesh has over 25 years of design engineering experience on a variety of projects spanning industries such as oil & gas, power, chemical, petrochemical and fertilizer. He is the editor-in-chief of a monthly pressure vessel newsletter which is read widely and respected worldwide since 2007. This newsletter deals with subjects commonly encountered when designing and fabricating pressure vessels, heat exchangers and tanks. Ramesh is an approved instructor at several other companies and organizations, both public and private. Ramesh resides at Houston, TX.



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