

**LATTICE Technology secures first commercial sale of its on-board LPV LNG Fuel tank**

**LATTICE Technology's CEO Hoonjin Park confirmed on May 23<sup>rd</sup> that the company has secured the order for a 15m<sup>3</sup> a lattice pressure vessel (LPV®) LNG fuel tank to be installed onboard a newbuild Port Cleaning Ship to assume service for the Ulsan Port Authority during 2019. The LPV® tank is a Type C-equivalent pressure vessel based on proprietary design by LATTICE Technology. This will be the first commercial contract for a LPV as well as the first LNG-fueled, public service vessel in South Korea.**



The Port Cleaning Ship is the first project following the Korean government's recent assertion that it will actively boost eco-friendly LNG-fuelled shipping by ordering LNG-fuelled public service ships and supporting use of LNG-fueled, commercial ships. LATTICE Technology is proud to have been chosen to deliver its unique LPV LNG fuel tank for this project. This LPV is designed for 9 barg pressure and its shape is adapted to the specific ship structure; this implies that it provides 50 percent more capacity than that of a traditional, cylindrical pressure vessel.

LATTICE technology's proprietary LPV containment system for LNG has been approved by seven international classification societies following the successful test of four prototype tanks. Sunbo Industry will combine the LPV fuel tank with its LNG fuel supply system. The total system will be tested and certified by the Korean Register (KR) and delivered to Korea Shipyard in November of this year.

Dr. Pål Bergan, CTO, explains the many advantages of the technology; "The LPV employs a modular, internal lattice structure that enables a completely new type of pressure vessel with unique flexibility with regard to being fully scalable in all directions with a

box-like shape. The design is easily adapted to a prescribed design pressure and the overall safety performance is superior to traditional cylindrical pressure vessels. Also, resulting from the internal structure, the fluid sloshing problem is eliminated by default”.

Keunoh Park, Chief Sales Officer, emphasizes “With the flexibility of the LPV in terms of scale and shape, the designer can fit the tank to the ship, - not the other way around. This way, we can fully utilize the available space in the hull, minimizing specific tank weight and cost while rendering valuable space for paying cargo. The technology enables volumes ranging from 0.5 m<sup>3</sup> to 50,000 m<sup>3</sup> and the LPVs can handle design pressures up to 50 bar. We are collaborating with renowned companies to expand the applications to pressurized storage of CNG, LPG, liquid hydrogen, and steam in addition to LNG.”

Much stricter global regulations on marine stack gas emissions (SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub> and particle matters) are coming into effect from year 2020. By effectively addressing reduction of all such emissions, LNG is considered being a viable alternative to new oil based marine fuels under development and to use of scrubbers for combustion gases. The new regulatory framework is implemented by the International Maritime Organization (IMO) and supported by national and regional authorities such as the Korean Government which is promoting eco-friendly vessels running on LNG. LATTICE Technology’s LPV fuel tank systems for LNG help increasing the flexibility in design for LNG retrofits as well as newbuilds. The LPVs reduce the cost of installation and operation of LNG containment systems and is suited for the entire supply chain from large scale cargo and storage, through bunkering and on to the on-board LNG fuel tank.

### **About LATTICE Technology**

LATTICE Technology was established in 2012 with the purpose of commercializing a series of innovations by Norwegian professor Pål G. Bergan and professor Daejun Chang at Korean Advanced Institute of Science and Technology (KAIST). Among a series of patents owned by the company the current focus is on new containment solutions for pressurized gases. The pressure vessel technology has been extensively tested with four test tanks and has received approval from the major classification societies (ABS, ABS Consulting, BV, DNVGL, KR, LR, NK). LATTICE Technology is now making the transition from mainly doing research and technology development into becoming a fully international, commercial company providing engineering services and licensed solutions together with partnering LPV tank builders.