



Tinkerine Initiates Development of a Portable Mechanical Ventilator using 3D Printed Origami Tubes

June 4, 2020 - Tinkerine™ Studios Ltd. (TSXV: TTD) ("Tinkerine" or the "Company") announces that in conjunction with Simon Fraser University ("SFU"), the University of British Columbia ("UBC") and Vancouver General Hospital ("VGH") the receipt of a Natural Sciences and Engineering Research Council of Canada ("NSERC") grant for the design and prototyping of a low-cost portable 3D printed mechanical ventilator with 3D Origami tubes.

The proposed mechanical ventilator delivers breaths by contracting a 3D designed Origami tube instead of compressing a conventional bag-valve mask (BVM). The 3D designed Origami tube will change its volume more than 85 % of the original volume, which is compared with conventional BVM's 25% volume change. Therefore, the proposed ventilator can become much smaller in size than the conventional one for the portable application. Additional future goals are to make the Origami air tubes versatile for many other types of mechanical ventilator applications.

"NSERC Alliance grant project is approved for the industrial partnership project together with SFU, UBC, Tinkerine, and Pantheon. The project aims to develop 3D printed novel Origami tubes for a portable mechanical ventilator to cope with Pandemics like Covid-19." stated the project leader, Dr. Woo Soo Kim. Dr. Woo Soo Kim's research team at SFU has extended the concept of 3D printed wearables and sensing robot applications by multi-material 3D printing to medical ventilators.

Eugene Suyu Chief Executive Officer of Tinkerine states "I'm excited about this collaboration as it's going to accelerate the development of knowledge and IP in an area that desperately needs attention in today's world. Partnerships with institutions, and industry is key in how we design and develop innovation."

Origami tubes enhance the functionality of thin sheet structures to create deployable, reconfigurable and mechanistically unique three-dimensional structures. Potential application includes actuators, bellows, pipes and micro-robotics. The initial NSERC grant is valid for up to CAD \$50,000 and consists of milestones to design and optimize highly contractable 3D Origami tubes in foldable designs.

Any portable 3D printed mechanical ventilator would require Health Canada approval prior to use.

About Tinkerine

Our mission is to provide a foundational understanding about Applied Design and demonstrated by 3D printing. Our ecosystem of 3D printing products and educational resources equips future generations with the innovative tools and products to stay ahead in a fast-paced, tech-driven world. Tinkerine enables the curious to convert creative ideas into the tangible and the unimaginable.

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