Realheart strengthens research group with new doctoral student in computer simulation

Realheart has received a joint research grant to hire a doctoral student at the University of Bath in collaboration with Dr Katharine Fraser, expert in computer simulation of heart pumps. A new doctoral student has now been recruited, who will start this fall. The work involves creating models of the latest product version for different types of blood flow simulations.

A total artificial heart is a blood pump and must therefore be very good at managing the blood to minimize the risk of blood damage-related side effects. Therefore, the company places great emphasis on analysing the blood flow in the pump by various methods. One such method is computer simulation (computational fluid dynamics) of how the blood moves in the pump.

An earlier prototype version that was analysed showed a low risk of blood damage, which is good news. The next step is to analyse the latest prototype version to investigate how the pump design can be further developed to minimize blood damage. Through this collaboration we gain access to a resource of expertis for 3.5 years.

CEO, Azad Najar comments “We are very pleased to be able to continue the successful research collaboration we have initiated with Dr Fraser at the University of Bath with enhanced resources. Realheart® TAH's flexible design where we can fine-tune how the AV plane moves and incorporate it into the automatic control algorithm means that we have very good conditions for identifying the ideal pumping rhythm to minimize the risk of blood damage.”

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Scandinavian Real Heart AB develops a total artificial heart (TAH) for implantation in patients with life-threatening heart failure. Realheart TAH has a unique, patented design that resembles that of the natural human heart. The artificial heart consists of a four-chamber system (two atriums and two chambers) which provides the opportunity to generate a physiologically adapted blood flow that mimics the body's natural circulation. A unique concept in the medical technology world.