

## **Simulation Based Design and Evaluation of Carotid Stents and Heart Valves**

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In an effort to develop novel carotid artery stents and heart valves, computational modeling and simulation is indispensable. In this talk, I will give an introduction to the design concept generation, computational finite element modeling, and evaluation of proposed designs, based on two recently completed projects. The crimping process of the device is intensively analyzed, as the implantation is percutaneous. The fatigue life of the design is also evaluated.

**Keywords:** Simulation based design, Finite element method, Carotid stent, Mitral valve replacement