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"This book presents an important and timely subject and contains a wide range of knowledge derived from the contributors' long-time experience. It is the first work to integrate medicine and engineering exceptionally well and a great reference for graduate students, researchers, and doctors specializing in microsurgery."

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This book presents the development of the endovascular evaluator (EVE), which was motivated by the lack of *in vitro* simulation tools to reproduce patient-specific vasculature morphology. The development of patient-specific silicone vasculature models and the EVE is a breakthrough that is improving medical training and facilitating research and development in industry and academia. This book explains the development of *in vitro* simulators for biomedical applications based on the scientific context in robotics and on the explanation of the medical procedure to be simulated. It presents modeling methods for *in vitro* representation of human tissue and of tissue integrity during endovascular surgery simulation. Additionally, it presents the applications of this *in vitro* vasculature modeling technology.

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