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Title:	Pioneering Works of N. S. Kapany in Biomedical Optics :Live Tissue Imaging, Retinal Photocoagulation, and Optical Oximetry
Authors:	Panda, Biswajit (/jspui/browse?type=author&value=Panda%2C+Biswajit) P. Singh, Kamal (/jspui/browse?type=author&value=P.+Singh%2C+Kamal)
Keywords:	Tissue Imaging Retinal Photocoagulation Optical Oximetry
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Abstract:	Narinder Singh Kapany, considered by many as the father of fibre optics, was one of the first scientists to start the field of fibre-optics with ground-breaking demonstrations of optical fibre-based imaging, sensing, and optical communication systems. Although his seminal works in the area of fibre-optics are well-documented, much less is known about his equally important contributions in the development of biomedical optics. This article highlights Kapany's ground-breaking innovations in pushing the frontiers of biology and medicine by elaborating three selected examples from his work: (i) fibreoptics hypodermic probe for live-tissue imaging, (ii) photocoagulation of retina, and (iii) optical oximetry of blood. We discuss the basics of these ideas and focus on how Kapany overcame many challenges to demonstrate ready-to-use prototypes from scratch. These innovations form precursors to many modern-day instruments, which are essential for current medical applications. Kapany's life journey is yet another embodiment of how curiosity-driven research can change the course of human history.
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