

Appendix 6: Narinder Singh Kapany

Narinder Singh Kapany (31/10/1926 to 04/12/2020) was born in Moga, Punjab, India, and raised in the city of Deradhun, in the foothills of the Himalayas. Alongside his academic studies, Kapany had a practical interest in science. A gift from his father of a camera made him determined to understand its inner workings, and this early interest in optics stayed with him through his career. An additional spur to his interest was remark from a teacher that light only travelled in straight lines, and Kapany thought that this could not be correct and was keen to demonstrate otherwise.

Kapany graduated from the University of Agra (now the Dr. Bhimrao Ambedkar University), but did not pursue further study straight away. He worked for a time at a government munitions factory in Deradhun, designing and making optical instruments, and later moved to Scotland to work at an optics firm, to pursue skills he could use to start his own company in India. Having moved from India, he became keen to study with Harold Hopkins, one of the foremost authorities in the field of optics, and so moved to London to study at Imperial College London for his PhD. Hopkins supervised Kapany's PhD studies, and encouraged Kapany to experiment with bundles of glass cylinders. Kapany worked to group hundreds of these glass fibres, and assembled a flexible fibroscope, which could be used to transmit images. This work resulted in the seminal paper published by Hopkins and Kapany in *Nature* in January 1954.

After receiving his PhD in 1955, Kapany moved to New York to work first at the University of Rochester and later the Illinois Institute of Technology, before moving to California to initiate various commercial and business interests. Kapany later returned to academia, at the University of California at Santa Cruz. His work laid the foundations for many areas of technology and medicine that are widespread today, including high-speed internet technology, pulse oximetry, laser-eye surgery, and distance-measuring equipment.

Outside of his academic and professional interests, Kapany was a committed Sikh, who was passionate about the Sikh heritage and culture, encouraging an interest from museums and galleries to feature works by Sikh artists.

Sources:

<https://www.nytimes.com/2021/01/07/technology/narinder-s-kapany-dead.html>

<https://www.nature.com/articles/s41566-021-00812-z.pdf?origin=ppub>