

# Atomic Force Microscopy for Biologists

Second Edition

"This book fills an important niche by providing an introduction to AFM that will be understandable to a wide range of scientists ... the reader is offered an introduction of sufficient brevity to actually be read and of sufficient depth to help in defining the potential uses of SPMs in his or her own research."

**Nature Cell Biology**

"I found this book easy to read with clear, simple explanations of a complex topic. I think that the selection of the subjects treated in the book is sufficient for the non-specialist to understand both the basic concepts of the AFM and the production of AFM images in biological systems."

**Microscopy and Analysis**

"... is an excellent introduction for anybody wishing to enter this field ... In summary I would strongly recommend this book to any biologist planning on carrying out research using SPM imaging techniques and existing users in the field who wish to broaden their knowledge of SPM imaging and the research already carried out on common biological systems."

**Drew Murray**

*JPK Instruments, Berlin, Germany*

"This book provides an excellent survey of novel applications. It is nicely illustrated with numerous images from leading experts in the field. Clear descriptions of the apparatus and its basic principles are provided in a way accessible to students/scientists who do not have a strong physics background. It will be useful to biologists, but also non-biologists dealing with biosystems ..."

**Professor Y F Dufrène**

*Université Catholique de Louvain, Belgium*

Atomic force microscopy (AFM) is part of a range of emerging microscopic methods for biologists which offer the magnification range of both the light and electron microscope, but allow imaging under the "natural" conditions usually associated with the light microscope. To biologists, AFM offers the prospect of high resolution images of biological material, images of molecules and their interactions even under physiological conditions, and the study of molecular processes in living systems. This book provides a realistic appreciation of the advantages and limitations of the technique and the present and future potential for improving the understanding of biological systems.

The second edition of this bestseller has been updated to describe the latest developments in this exciting field, including a brand new chapter on force spectroscopy. The dramatic developments of AFM over the past ten years from a simple imaging tool to the multi-faceted, nano-manipulating technique that it is today are conveyed in a lively and informative narrative, which provides essential reading for students and experienced researchers alike.

*Front cover: AFM image of Salmonella typhimurium grown on a glass coverslip, revealing flagellae and fimbriae (image size 8.5 x 8.5 microns).  
Sample courtesy: Roy Bongaerts, Institute of Food Research.*

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