

Preface

This book is intended to act as an overview of the ways in which “single molecule” methods have contributed to our understanding of biological systems and processes. The chapters have been written specially for the book and are aimed at the level of a final year undergraduate or a first-year PhD student. The hope, therefore, is that the book should be accessible to readers from a wide variety of backgrounds, as I feel is essential for this field of research, which is intrinsically interdisciplinary. Some biological knowledge, however, will be a benefit. The book is by no means comprehensive – nor could it hope to be – but I hope that it will provide a primer, and a starting point for further exploration.

In the first chapter, I have striven to give some background to the reader new to the field. The subsequent chapters are all written by leaders in their fields, and each covers a biological system that has been illuminated by the single molecule approach. Finally, the Appendix is intended to provide a useful reference on abbreviations, symbols and units that are commonly encountered in the field; in particular, as a scientist working at the UK’s national measurement institute, I wanted to include some notes on the SI and its use in biology.

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August 2008*