

## PLASTID BIOLOGY

Plastids reside in all plant cells, and take on different forms in relation to their cellular function, biochemistry and storage capacity. The modern era of molecular biology and molecular genetics has enabled much to be learnt about how plastids function, and how they relate to their evolutionary past. In this accessible text, Kevin Pyke expertly describes how the plastids are highly complex organelles at the very core of plant cellular function, providing final year undergraduate and graduate students with an overview of plastid biology and recent developments in the field. Topics covered include: a consideration of different plastid types and how they relate to cell function; plastid genomes and how proteins are imported into plastids; photosynthesis and core aspects of plastid biochemistry; plastid signalling and functionality within a cellular context; and plastid genetic manipulation. Supplementary colour images are available online at [www.cambridge.org/9780521885010](http://www.cambridge.org/9780521885010).

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Frontmatter  
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## Contents

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<i>Preface</i>	<i>page</i> vii
<i>Acknowledgements</i>	viii
1. <b>What are plastids and where did they come from?</b>	1
2. <b>Different types of plastids and their structure</b>	9
3. <b>The plastid genome – structure, transcription and translation</b>	31
4. <b>Photosynthesis</b>	61
5. <b>Plastid import</b>	81
6. <b>The development of the chloroplast</b>	106
7. <b>Plastid metabolism</b>	130
8. <b>Plastids and cellular function</b>	153
9. <b>Plastid transformation and biotechnology</b>	178
<i>Further reading and resources</i>	195
<i>Index</i>	197

## Preface

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Plants are fundamental in enabling the planet Earth to function as a relatively stable system. They exert control over the biosphere by their interaction with their environment, a fundamental aspect of which is fixing carbon dioxide from the atmosphere and generating oxygen, in the process of photosynthesis. This critical process is carried out by specialised chloroplast organelles within green plant tissues, primarily leaves. However, chloroplasts are only one member of a family of organelles called plastids, which reside in all plant cells, and which take on different forms in relation to their cellular function, biochemistry and storage capacity. For many years, photosynthesis research overshadowed other aspects of plastid biology, but in the last two decades, much new knowledge about how plastids function and how they relate to their evolutionary past has become available from research. This book provides an overview of a wide range of aspects of modern plastid biology, including a consideration of different plastid types and how they relate to cell function, plastid genomes and how proteins are imported into plastids, photosynthesis and core aspects of plastid biochemistry, plastid signalling and functionality within a cellular context and plastid genetic manipulation. The modern era of molecular biology and molecular genetics has enabled much to be learnt about how plastids function and a picture is revealed of a highly complex organelle at the very core of plant cellular function. This information should be useful for final-year undergraduate students or Masters students interested in plant sciences and cell biology.

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