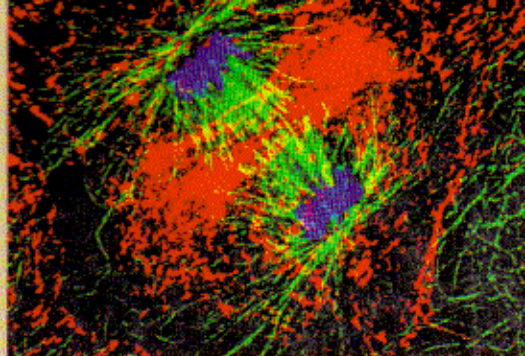




Channarayappa received his PhD from the University of Agricultural Sciences, Bangalore. He completed a second PhD in Genetics and Developmental Biology from West Virginia University, USA. He worked as a Postdoctoral Fellow and Postdoctoral Research Associate at the University of Texas, MD Anderson Cancer Center, Houston. He is the recipient of the Jawaharlal Nehru National Award for Outstanding Postgraduate Agricultural Research (1993), awarded by the Indian Council of Agricultural Research, New Delhi, for significant research contribution in genetics and plant breeding. He has been teaching molecular biology and biotechnology to both undergraduate and postgraduate students for more than 20 years. He is the author of many scientific papers resulting from research conducted in plant sciences, mutation research and cancer biology. He has authored the book *Molecular Biotechnology: Principles and Practises*, also published by Universities Press.

Cell Biology covers one of the most fundamental and elaborately studied areas of biology: the cell. The cell is undoubtedly the basic unit of life and has all the structural and functional properties required for life. It has been experimentally demonstrated that any genetic modification desired in an organism has to be made at the cellular level only. Therefore, understanding the cell in the context of structure and function is essential and inevitable.

The book has been divided into 20 chapters—beginning with the origin of biological systems and ending with tools for the study of cells. Every effort has been made to include the most recent information. Each chapter is provided with an adequate number of illustrations.

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- ❖ Biomolecules
- ❖ Prokaryotic cells
- ❖ Eukaryotic cells
- ❖ Biological membranes
- ❖ Mitochondria: The powerhouse of the cell
- ❖ Plastids: The food factory of the cell
- ❖ Cell division
- ❖ Cell signalling
- ❖ Sensory signalling
- ❖ Differentiation and development
- ❖ Multicellular organisms
- ❖ Cytoskeleton and cell motility
- ❖ Growth, sexual reproduction and aging
- ❖ Cell death and cell renewal
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- ❖ Non-cellular life forms
- ❖ Tools of cell biology

This book can serve as a basic textbook for students of molecular biology, genetics, biochemistry, agriculture and biotechnology, or as a reference book for those interested in learning the fundamentals of cell biology, in particular, the origin, organization and functions of subcellular components and cell types.

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