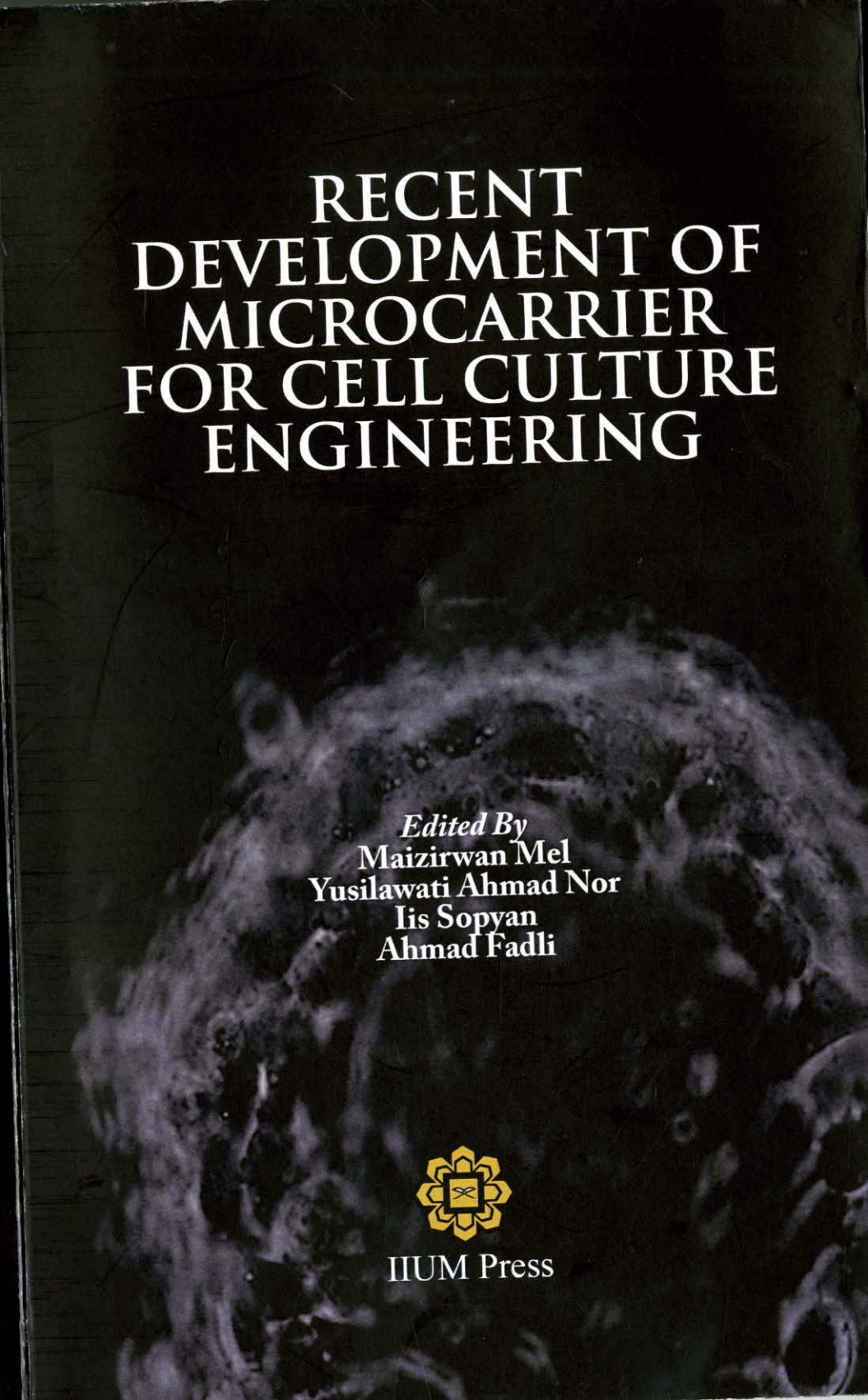
# RECENT DEVELOPMENT OF MICROCARRIER FOR CELL CULTURE ENGINEERING



*Edited By*
Maizirwan Mel
Yusilawati Ahmad Nor
Iis Sopyan
Ahmad Fadli

IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011


Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

Recent Development Of Microcarrier For Cell Culture Engineering
Maizirwan Mel
Include Index

ISBN 978-967-418-009-6

Member of Majlis Penerbitan Ilmiah Malaysia - MAPIM
(Malaysian Scholarly Publishing Council)

Printed by:
IIUM PRINTING SDN. BHD.
No. 1, Jalan Industri Batu Caves 1/3,
Taman Perindustrian Batu Caves,
Batu Caves Centre Point,
68100 Batu Caves,
Selangor Darul Ehsan

# Contents

# Chapter 12

# The Growth Study of DF1 Cell in Microcarrier Based Bioreactor

*Mohd Azmir Arifin, Maizirwan Mel, Raha Ahmad Raus, Sharifah Syed Hassan, Aini Ideris*

## 1. Introduction

Animal cell culture is the most important tool in the study of animal cell structure, function and differentiation. Animal cell culture is also important for the production of many important biological materials such as vaccines, enzymes, hormones, antibodies, interferons and nucleic acids. The majority of animal cells is anchorage-dependent and requires attachment to a surface for their survival and replication (Grinnell *et al.*, 1978; Adams, 1980; and Groot, 1995).

For large-scale production of animal cells an extensive surface is necessary for growth. Previously, the most popular methods for providing this surface involved multiple glass or plastic bottles. The surfaces available for growth were only those of the inside of the bottles. Such systems are labor intensive and require both a large amount of space and specific equipment handling. Further disadvantages in the bottle technique are the variation that can arise between different bottles such as the pH and the increasing risk of contamination as the number of units to handle increases.