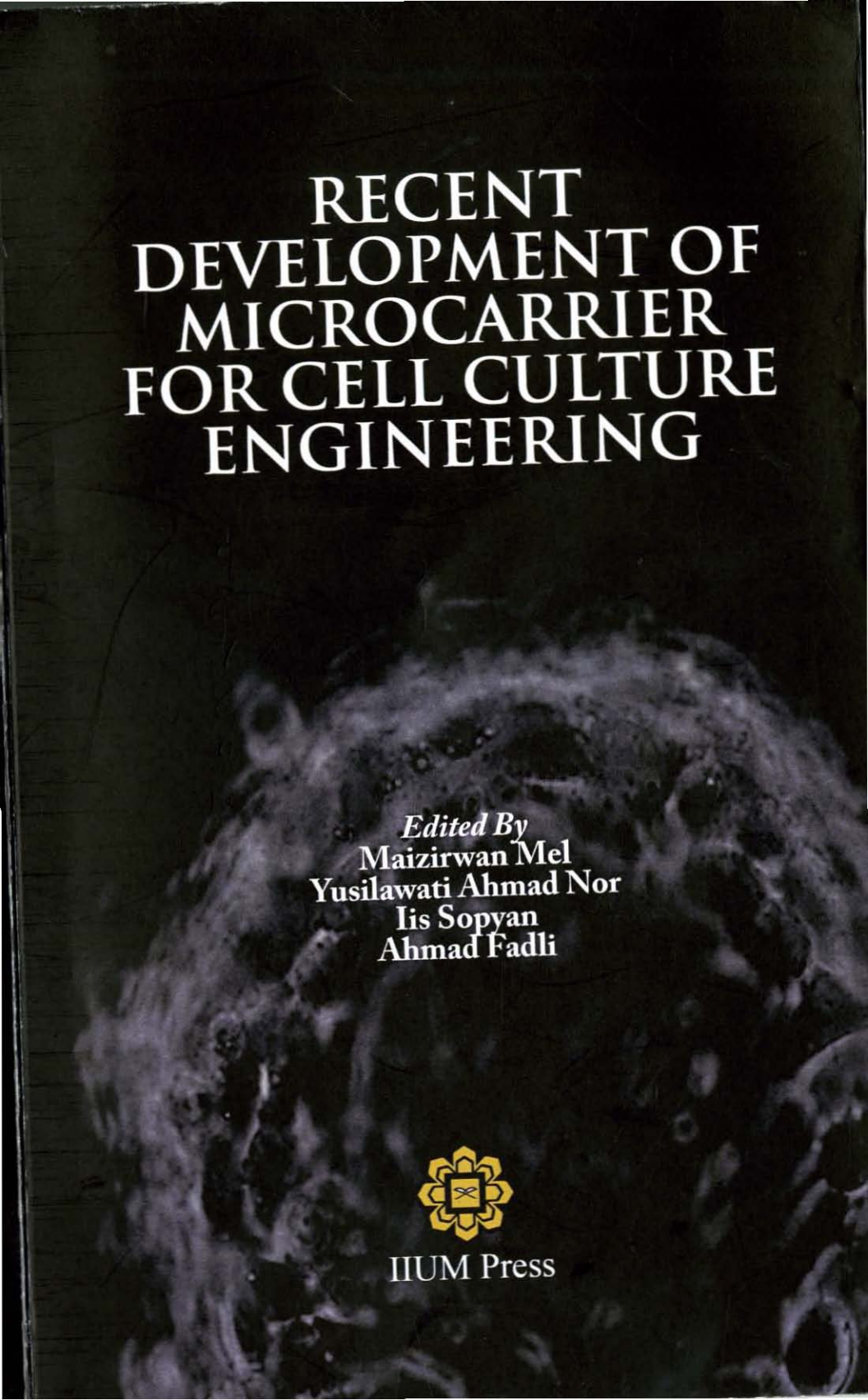
RECENT DEVELOPMENT OF MICROCARRIER FOR CELL CULTURE ENGINEERING



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Chapter 5

Biocompatibility of Porous Hydroxyapatite Microcarrier for Vero Cell Culture Application

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1. Introduction

Microcarrier culture is a technique which makes possible the practical high yield culture of anchorage-dependent cells. Microcarriers enable cultivation of adherent cells in stirred tanks reactors: they provide surface area for cells to adhere and grow on. Ceramic microcarrier introduces new possibilities for the culture of animal cells. Ceramic microcarrier is predicted to meet the special requirements of a microcarrier technique. It is because ceramics generally have good mechanical, chemical and thermal resistance (Hu, 2004). Cell culture techniques have become vital to the study of animal cell structure, function and differentiation, and for the production of many important biological materials such as vaccines, enzymes, hormones, antibodies, interferons and nucleic acids (Malda and Frondoza, 2006). In microcarrier culture cells grow as monolayers on the surface of small spheres, which are usually suspended in culture medium by gentle stirring. By using microcarriers in simple suspension culture systems it is possible to achieve yields of several million cells per milliliter.