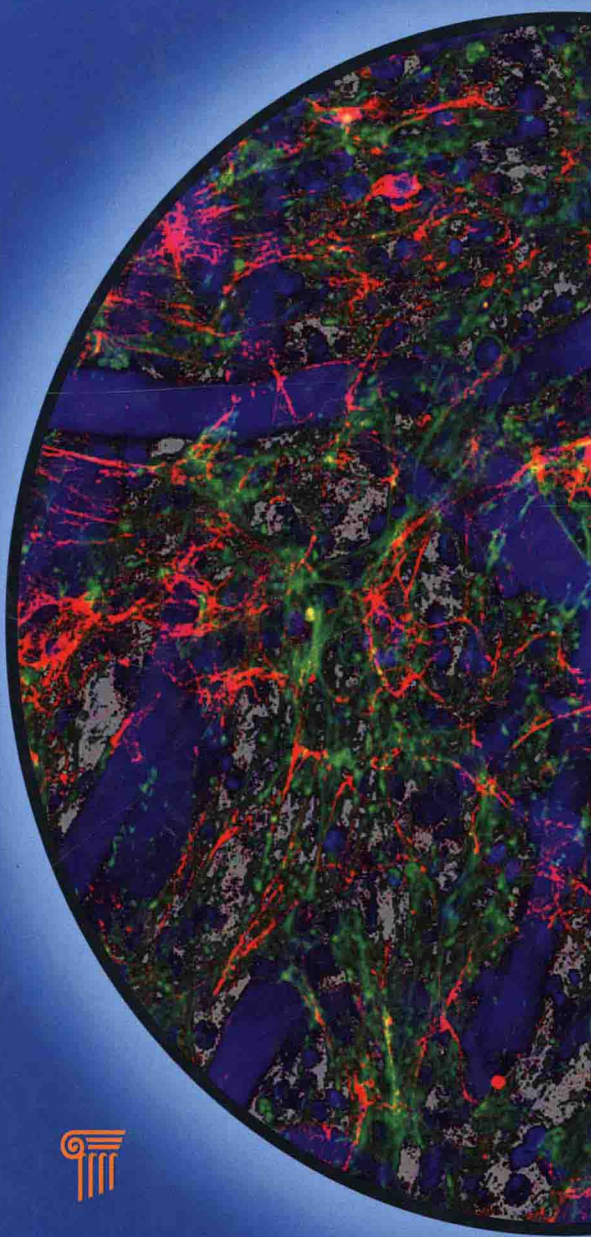
Scaffolds for Tissue Engineering

Biological Design, Materials, and Fabrication



edited by
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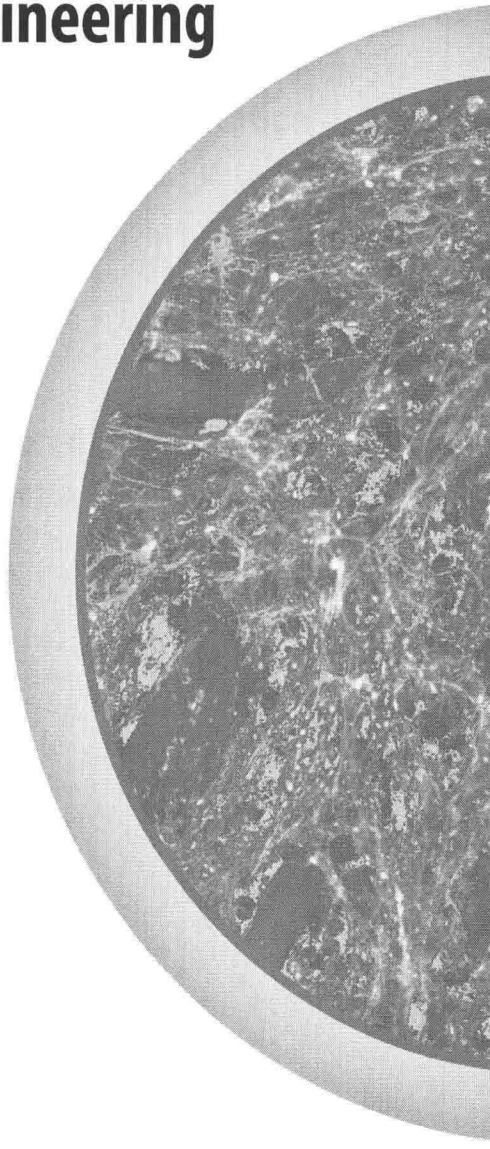

Preface

Three years ago, after a conference in Italy, we received an invitation by email from Stanford Chong, Pan Stanford Publishing, to submit a book project. It was to be focused on the functional applications of polymers (the theme of the conference), or another topic of our interest.

After some months of thought, we submitted our idea, which came after long discussions between us, sometimes involving our coworkers, our students, and also scientists who we were visiting then during our travels abroad.

We were well aware of the fact that there were many excellent books on the topic, and that others will have been published before this one. However, we imagined our book as the "negotiated" synthesis between the two different approaches of tissue engineering—that of the biologist (Antonella Motta) and of the engineer (Claudio Migliaresi)—which were much more different at that time, than now.

Our common assumption was that a scaffold should be designed, in terms of materials, architecture, properties, to accomplish not only mechanical but biological requirements, and our book should properly highlight this aspect, in both title and content. This is how the title of the book, *Scaffolds for Tissue Engineering: Biological Design, Materials, and Fabrication*, came into being.

Often scaffolds are made by a random combination of materials, with architecture and properties that evoke unrealistic biological behaviors, ignoring the fact that a scaffold is an *active device* that interacts with cells *in vitro* and with the complex biological system *in vivo*. The chapters of this book, written by leading scientists in the field, many of them also good friends, reflect this idea. And upon reading the book, which we have done several times, we must state that the contributing authors have done a wonderful job.

We are grateful to them for having accepted our invitation and for the valuable time they have spent on the book. We are also grateful to Pan Stanford Publishing, which patiently forgave our delay

with respect to the scheduled times, and in particular to Stanford Chong and Shivani Sharma, who were prompt in offering help and assistance.

Claudio Migliaresi
Antonella Motta
Spring 2014

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