Po-Yu Chen's Groundbreaking Textbook on Bio-inspired Materials

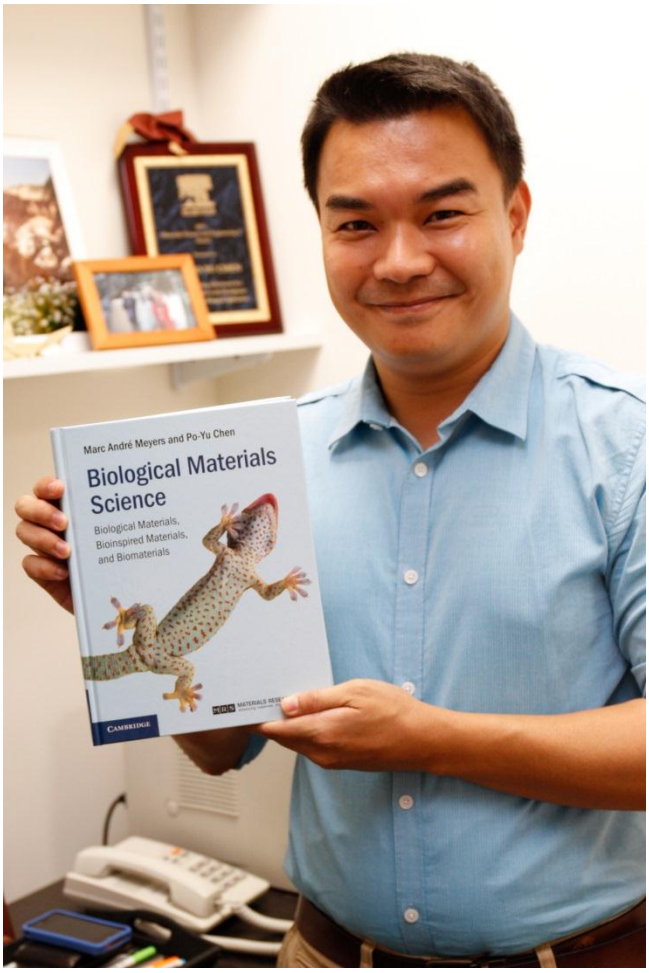
Po-Yu Chen of Department of Materials Science and Engineering, has recently completed a textbook titled *Biological Materials Science: Biological Materials, Bioinspired Materials, and Biomaterials*. Coauthored with Professor Marc Meyers, the book was published in September by the University of Cambridge and has already become required reading at a number of major campuses; a Chinese version is due to come out shortly.

Taking Mother Nature as the guide, the emerging field of bioinspired materials focuses on using natural substances to develop materials which are light, strong, pliable, and versatile. For example, by studying the outer skin of a shark researchers have learned that furrowing can be used to make a material resistant to adhesion and the growth of germs; and studying the nacre (a chalky substance formed of calcium carbonate) of abalones has led to the development of a composite material with a strength and durability similar to that of brick tiles and cement. These are just a few of the ways in which research on the distinctive qualities of plants and animals has led to the development of new materials.

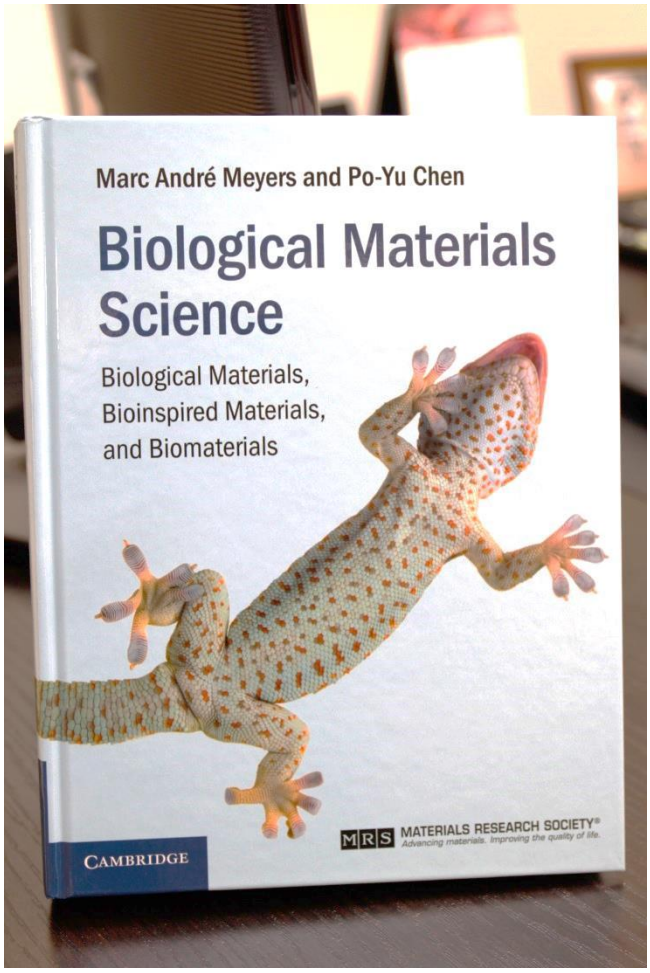
In its 13 chapters and 630 pages, *Biological Materials Science* provides a systematic presentation of the main achievements in this emerging field. Chen points out that in recent years many schools have begun to offer courses in bioinspired materials. Yet, the field is still in its infancy and there remains a dearth of reference materials, presenting considerable difficulties for neophytes wishing to gain a broad overview.

Five years ago when Chen and Meyers (Chen's former academic advisor) realized the need for such a book, and three years ago they began making preparations. As Chen relates, "We wanted to make a systematic presentation of both natural and bioinspired materials. . . . It's already become required reading at a number of schools overseas." They are now planning an updated edition which will include the latest findings in the field.

Chen is also actively promoting biological materials science in Taiwan and encouraging students to take an interest in bioinspired materials. As Chen says, "I'd like to set up an information platform which can help students in junior and senior high school develop an interest in this field." At present, however, it's still quite difficult to collect samples, prepare test pieces, and conduct experiments. Thus Chen has begun to work with teachers and science clubs at a number of high schools and junior high schools to organize activities in which students are encouraged to observe and explore the natural world. At the same time, Chen is encouraging his university and graduate students to conduct advanced research in the field.



Po-Yu Chen holding up his recently published textbook.



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