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A Comparison on the Structural and Mechanical Properties of Untreated and Deproteinized Nacre ABSTRACT; INTRODUCTION; MATERIALS AND METHODS; Deproteinization; Shell sectioning; Mount Setup; Mechanical Testing; RESULTS AND DISCUSSION; Imaging of Deproteinized Nacre; Tensile Tests of Deproteinized Nacre Pucks; Nanoscratch Test; Nanoindentation experiments; CONCLUSIONS; ACKNOWLEDGEMENTS; REFERENCES; Reinforcing Structures in Avian Wing Bones; ABSTRACT; 1. INTRODUCTION; 2. MATERIALS AND METHODS; 2.1 Sample preparation; 2.2 Mineral content; 2.3 Structural characterization; 2.4 Image processing; 2.5 Micro-computed tomography (CT); 2.6 Hardness testing; 2.7 Statistical analysis; 2.8 Finite element analysis (FEA); 3. RESULTS AND DISCUSSION; 4. CONCLUSIONS; ACKNOWLEDGEMENTS; REFERENCES; Structural Differences between Alligator Pipehorse and Bay Pipefish Tails; ABSTRACT; 1. INTRODUCTION; 2. MATERIALS AND METHODS; 2.1 Sample preparation; 2.2 Partial deproteinization; 2.3 Optical microscopy; 2.4 Micro-computed tomography (CT) analysis; 2.5 Scanning electron microscopy; 2.6 Microhardness; 3. RESULTS AND DISCUSSION; 4. CONCLUSIONS; ACKNOWLEDGEMENTS; REFERENCES Initial Investigations in Applying a PILP-Mineralization System to Calcium Oxalate Formation using Vapor Diffusion ABSTRACT; INTRODUCTION; METHODS; RESULTS; DISCUSSION; CONCLUSION; ACKNOWLEDGEMENT; REFERENCES; Utilizing Kaolinite and Amorphous Calcium Carbonate Precursors to Synthesize Oriented Aragonitic Structures; ABSTRACT; INTRODUCTION; MATERIALS AND METHODS; SYNTEHTIC ACC PRODUCTION; POLARIZED LIGHT MICROSCOPY; SCANNING ELECTRON MICROSCOPY (SEM); TRANSMISSION ELECTRON MICROSCOPY (TEM); ATOMIC FORCE MICROSCOPY (AFM) IMAGING ATTENUATED TOTAL REFLECTANCE- FOURRIER TRANSFORM INFRARED (ATRFTIR) SPECTROSCOPY

Sommario/riassunto

A collection of papers from the below symposia held during the 10th Pacific Rim Conference on Ceramic and Glass Technology (PacRim10), June 2-7, 2013, in Coronado, California 2012: Advances in Biomineralized Ceramics, Bioceramics, and Bioinspired Designs Nanostructured Bioceramics and Ceramics for Biomedical Applications
