



(12) **United States Patent**
Giordano et al.

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(54) **POLYMER RE-INFORCED ANATOMICALLY ACCURATE BIOACTIVE PROTHESES**

(58) **Field of Classification Search** 424/422, 424/423, 484
See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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This patent is subject to a terminal disclaimer.

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(57) **ABSTRACT**

(65) **Prior Publication Data**

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Customized implants for use in reconstructive bone surgeries where anatomical accuracy and bone adaptation are important, such as plastic and craniomaxillofacial reconstructions. This implant comprises a porous surface layer and a tough inner core of interpenetrating phase composite. The porous surface layer enhances the biocompatibility, tissue ingrowth, and implant stability. The tough inner core improves the mechanical properties of the implant with a high fracture toughness and a low modulus. The anatomical accuracy of the implants will minimize the intra-operative manipulation required to maintain a stable host bone-implant interface.

Related U.S. Application Data

(63) Continuation of application No. 09/574,146, filed on May 18, 2000, now Pat. No. 6,605,293.

(60) Provisional application No. 60/182,825, filed on Feb. 16, 2000, provisional application No. 60/135,009, filed on May 20, 1999.

(51) **Int. Cl.**
A61F 2/36 (2006.01)

(52) **U.S. Cl.** 424/423; 424/422; 424/423; 424/484

18 Claims, 1 Drawing Sheet

