

การเพิ่มความแข็งแรงแก่ไฮดรอกซีอะพาไทต์โดยการเคลือบ



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STRENGTHENING OF HYDROXYAPATITE BY COATING



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สรุปสาระสำคัญของวิทยานิพนธ์ : การเพิ่มความแข็งแรงแก่ไฮดรอกซีอะพาไทต์โดยการเคลือบ
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งานวิจัยนี้มีจุดประสงค์เพื่อที่จะเพิ่มความแข็งแรงแก่ไฮดรอกซีอะพาไทต์ โดยการเคลือบ
ชั้นตอนการทดลองได้แก่ การเตรียมไฮดรอกซีอะพาไทต์ 2 ชนิด (TP และ MP) ที่มีสัมประสิทธิ์การ
ขยายตัวเมื่อได้รับความร้อนแตกต่างกัน, อัดขึ้นรูปไฮดรอกซีอะพาไทต์แต่ละชนิดให้มีรูปร่างเป็นแท่ง
สี่เหลี่ยมผืนผ้าโดยใช้แรงอัดทิศทางเดียว, เคลือบชิ้นงานที่ผ่านความร้อนมาแล้วโดยการชุบในน้ำเคลือบ
ซึ่งประกอบด้วยไฮดรอกซีอะพาไทต์ที่มีอัตราส่วน MP:TP ต่างๆ กัน, ทำการเผาและวัดค่าความแข็งแรง
ค่าความแข็งแรงเนื่องจากแรงดัดโค้งสูงสุด (41.42 MPa) พบได้ในชิ้นงาน TP ซึ่งถูกเคลือบ
ด้วยน้ำเคลือบซึ่งประกอบด้วยไฮดรอกซีอะพาไทต์ที่มีอัตราส่วน MP:TP = 50:50 และทำการเผาที่อุณหภูมิ
1300 องศาเซลเซียส เป็นเวลา 1 ชั่วโมง ค่าความแข็งแรงนี้เพิ่มขึ้นประมาณ 8.7 % เมื่อเทียบกับชิ้น
งานที่ไม่ได้ถูกเคลือบ



ภาควิชา.....วิทยาศาสตร์.....
สาขาวิชา.....เทคโนโลยีเซรามิก.....
ปีการศึกษา.....2536.....

ลายมือชื่อนิสิต.....
ลายมือชื่ออาจารย์ที่ปรึกษา.....
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม.....

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This research has the objective to strengthen hydroxyapatite by coating. Sequence of the experiment is preparing two kinds of hydroxyapatite (MP and TP) having different thermal expansion coefficients, forming each of them into a rectangular bar by uniaxial pressing technique, coating each green specimen by dipping in suspension of the hydroxyapatite mixed in various proportions, sintering and strength measuring.

The maximum flexural strength (41.42 MPa) is observed in TP body coated with 50:50 (MP:TP) coating composition and sintered at 1300°C for 1 h. The strength increases to about 8.7 % compared with uncoated specimen.



ภาควิชา.....วัสดุศาสตร์.....

สาขาวิชา.....เทคโนโลยีเซรามิก.....

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ลายมือชื่ออาจารย์ที่ปรึกษาร่วม.....

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