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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel) : **THE EFFECT OF HYDROTHERMAL HOLDING TIME ON THE CHARACTERIZATION OF HYDROXYAPATITE SYNTHESIZED FROM GREEN MUSSEL SHELLS**

Jumlah Penulis : 8 orang (Rifky Ismail, Muhammad Bagus Laroybafih, Deni Fajar Fitriyana, Sri Nugroho, Yanuar Iman Santoso, Ahmad Jazilussurur Hakim, Mohammad Syahreza Al Mulqi, Athanasius Priharyoto Bayuseno)

Status Pengusul : Penulis Pertama

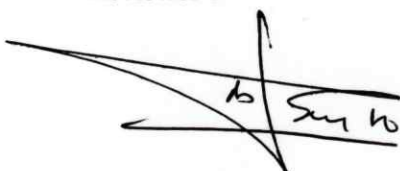
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- c. Vol, No., Bln Thn : Volume 80 (1), 2021
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Reviewer 1



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Semarang, 12 Maret 2021

Reviewer 2



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2. Ruang lingkup dan kedalaman pembahasan:

Artikel ini membahas tentang sintesa kristal hidroksiapatit murni cangkang kerang hijau tua. Fokus penelitian adalah sintesis HAp menggunakan metode hidrotermal yang bahan dasarnya adalah cangkang kerang hijau yang telah dimurnikan melalui metode endapan kalsium karbonat (PCC). Pembahasan dilakukan secara mendalam dengan berbagai hasil SEM hasil sintesis.

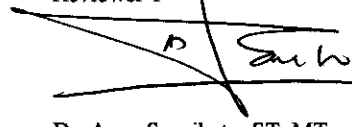
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Semarang, 11 Maret 2021
Reviewer 1

A handwritten signature in black ink, appearing to read 'Agus Suprihato', is written over a set of three horizontal lines. The signature is stylized and cursive.

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Unit Kerja : Departemen Teknik Mesin FT UNDIP

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Total = (100%)	40,00				34,00
Nilai Pengusul (kontribusi pengusul penulis) = 60% x 34,00 = 20,40					

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2. Ruang lingkup dan kedalaman pembahasan:

Artikel ini membahas tentang sintesis hidroksiapatit yang dibuat dari cangkang kerang hijau dengan menggunakan metode hidrotermal. Ruang lingkup pembahasan cukup baik dan detil berbagai hasil SEM yang jelas dan analisis mendalam.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

Artikel ini memiliki nilai kebaruan tinggi. Cangkang kerang hijau dimurnikan dengan endapan metode kalsium karbonat (PCC) menghasilkan fase kristal dengan dominasi vaterite tahap. Sitasi yang digunakan juga terkini (lebih dari 80%). Turnitin index nya juga cukup rendah, yaitu 17%.

4. Kelengkapan unsur dan kualitas terbitan:

Jurnal ini tergolong jurnal internasional bereputasi (Q3) dengan SJR sebesar 0,243 Kualitas terbitan juga cukup baik jika dilihat dari artikel-artikel yang diterbitkan dan konsistensi kualitas artikel.

Semarang, 12 Maret 2021
Reviewer 2



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Journal of Advanced Research in Fluid Mechanics and Thermal Sciences
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Abstract

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Hydroxyapatite is generally utilized in medical fields especially as a substitute to bone and teeth. Hydroxyapatite nanoparticles have been successfully synthesized from green mussel shells as a source of calcium carbonate by hydrothermal method. The green mussel shells were calcined, hydrated, and undergone carbonation to form Precipitated Calcium Carbonate (PCC). The PCC of shells was then added with (NH₄)₂HPO₄ with the mole ratio of Ca/P = 1.67. Hydrothermal reaction was carried out at 160°C with variations of the holding time (14, 16, and 18 hrs). The formation of hydroxyapatite was characterized using XRD and SEM-EDX. The XRD patterns showed that the products were hydroxyapatite crystals. The morphology of hydroxyapatite observed using SEM showed that the crystal uniformity of hydroxyapatite. The best result was obtained at 18 hrs holding time of hydrothermal because the hydroxyapatite produced has the highest purity without any impurities phase. Copyright © 2021 PENERBIT AKADEMI BARU - All rights reserved

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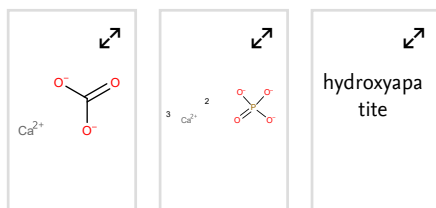
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green mussel shells
hydrothermal
Hydroxyapatite
precipitated calcium carbonate

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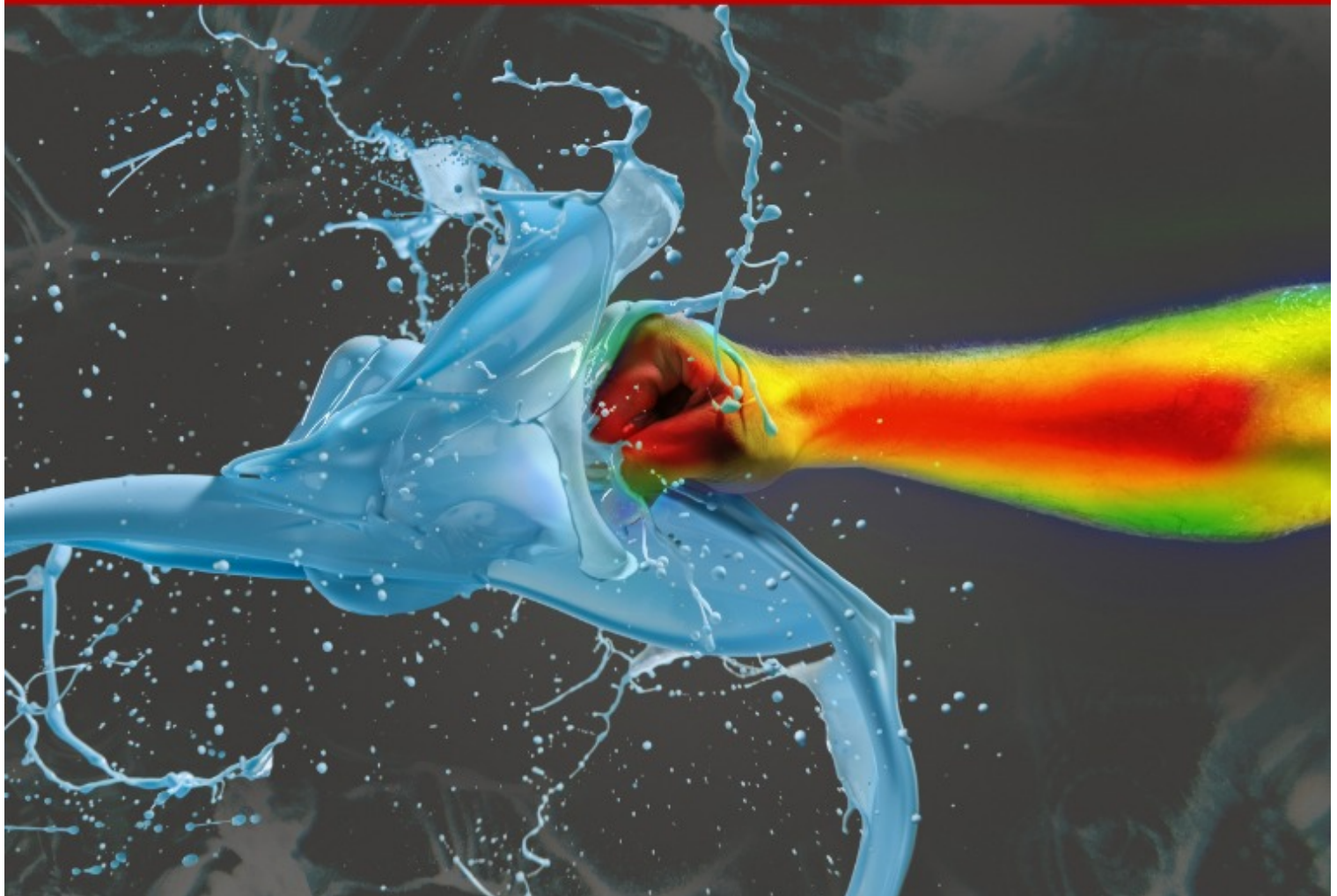
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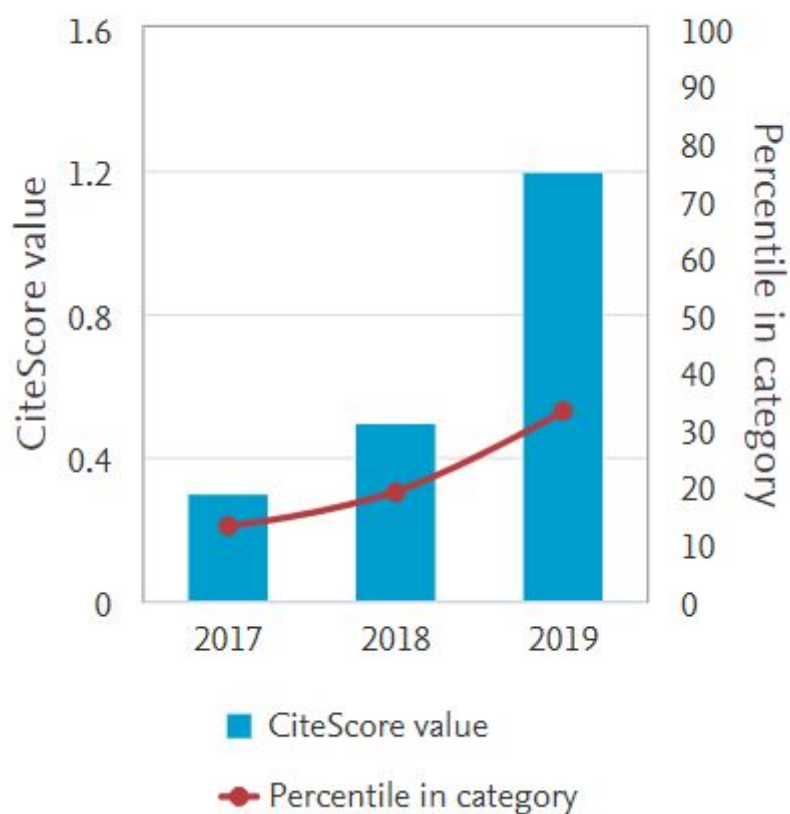
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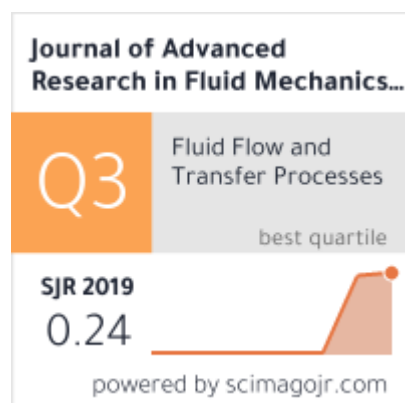
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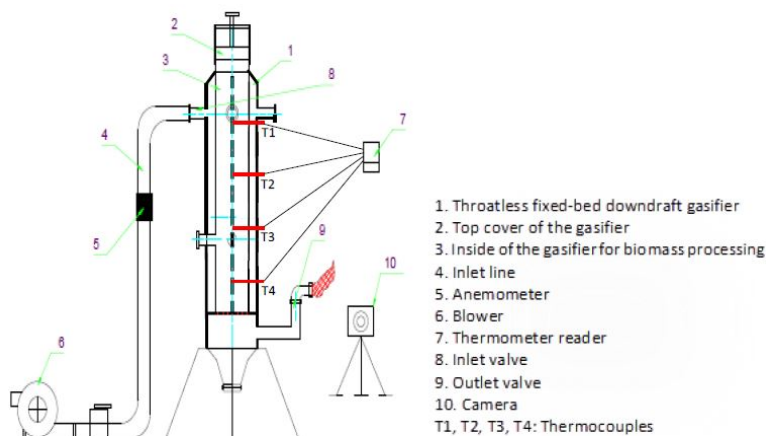


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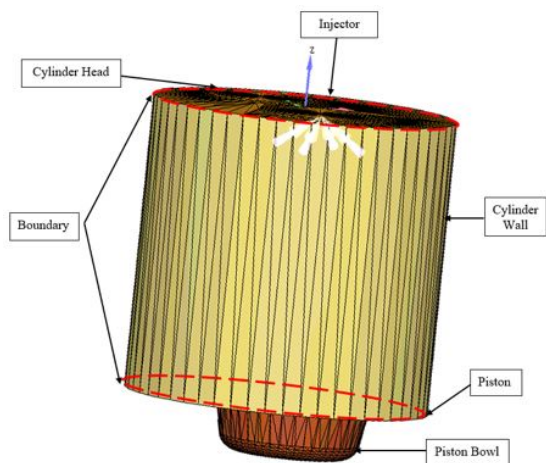


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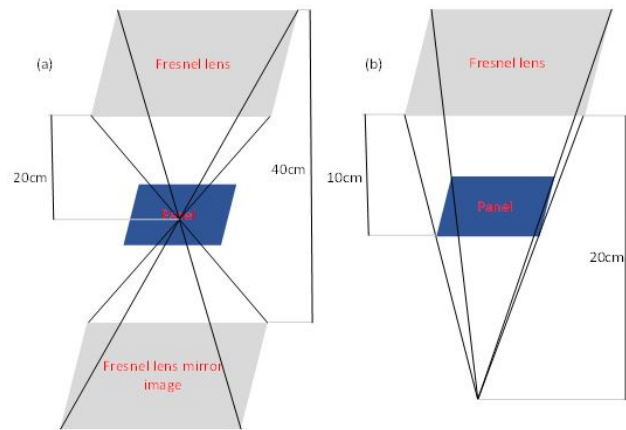


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Table 1
Glass composition in mol% and density (g cm⁻³)

Glass	B ₂ O ₃	SiO ₂	Al ₂ O ₃	ZnO	Na ₂ O	Dy ₂ O ₃	Tb ₄ O ₇	Density
H	60	10	5	15	10	0	0	3.061
S1	59.5	10	5	15	10	0.5	0	3.100
S2	59.5	10	5	15	10	0	0.5	3.097
S3	59.4	10	5	15	10	0.5	0.1	3.107
S4	59.25	10	5	15	10	0.5	0.25	3.118
S5	59	10	5	15	10	0.5	0.5	3.136
S6	58.75	10	5	15	10	0.5	0.75	3.154
S7	58.5	10	5	15	10	0.5	1	3.173

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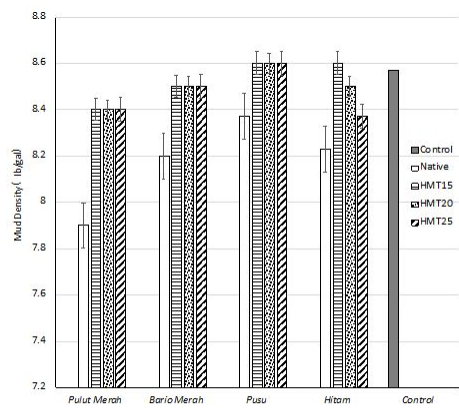


Fig. 2. Mud density of prepared drilling muds (Note: Native=Rice flour without heat moisture treatment; HMT15=Heat moisture treatment on rice flour with 15% moisture content; HMT20=Heat moisture treatment on rice flour with 20% moisture content; HMT25=Heat moisture treatment on rice flour with 25% moisture content)

Heat Moisture Modified Rice Flours as Additive in Drilling Fluids

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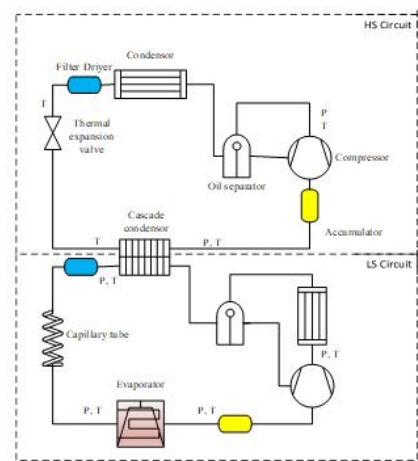


Fig. 1. Cascade refrigeration system

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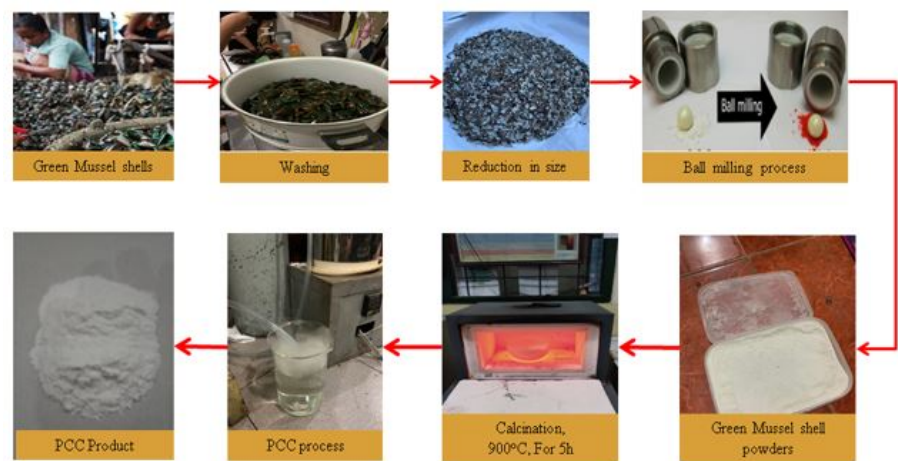


Fig. 1. The set-up experiments of green mussel shells purification with the PCC method

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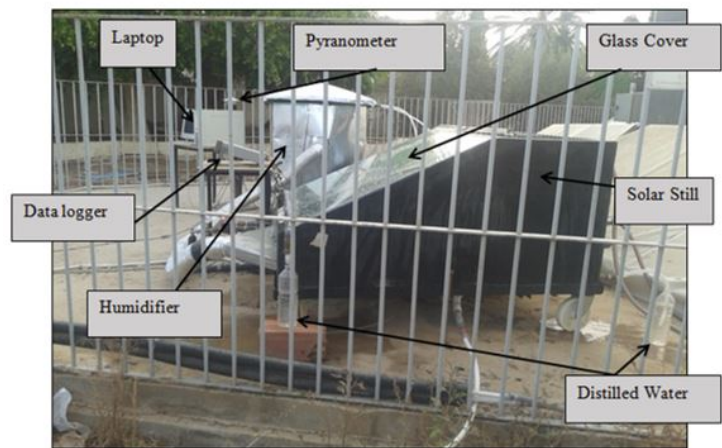


Fig. 2. Photograph of the experimental still (side view)

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