Invitation to Review for Polymer Composites, PC-14-0566

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To:Mohamed Eldessouki <eldesmo@tigermail.auburn.edu>;

22-Jun-2014

Dear Dr. Eldessouki,

Manuscript ID PC-14-0566 entitled "Mechanical Properties of Alkali Treated Oil Palm Mesocarp Fiber/Poly(butylene succinate) Biocomposites", by THEN, YOON YEE; IBRAHIM, NOR AZOWA; ZAINUDDIN, NORHAZLIN; ARIFFIN, HIDAYAH; Wan Yunus, Wan Md Zin, has been submitted to Polymer Composites.

I invite you to review this manuscript. The abstract appears at the end of this letter, along with the names of the authors. Please let me know within 5 days if you will be able to review this paper. If you are unable to review this paper, would you take a moment to please recommend one or two other possible referees with expertise in this area?

Please consider whether you have any conflict(s) of interest that may have an impact on the impartiality of your review (including in relation to any Company and/or commercial product mentioned in the article). If your conflict is serious enough to preclude your participation you should decline this invitation to review. Please contact me or the Editorial Office prior to accepting this invitation if you'd like to discuss what constitutes a serious conflict.

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I would hope that you complete your review within few weeks. Please know that and the authors and I appreciate your service.

Sincerely,

Prof. Scott Case
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Associate Editor - Polymer Composites Journal

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MANUSCRIPT DETAILS

TITLE:
Mechanical Properties of Alkali Treated Oil Palm Mesocarp Fiber/Poly(butylene succinate) Biocomposites

AUTHORS:
THEN, YOON YEE; IBRAHIM, NOR AZOWA; ZAINUDDIN, NORHAZLIN; ARIFFIN, HIDAYAH; Wan Yunus, Wan Md Zin

ABSTRACT:
In this study, oil palm mesocarp fiber (OPMF) was surface treated with varying NaOH concentration (1, 3, 5, 7 or 9%) and soaking time (1, 2, 3 or 4h) at room temperature in order to improve its adhesion with the poly(butylene succinate) (PBS). The NaOH treatment removed fiber's surface impurities and hemicellulose component and resulted in clean and rough fiber surfaces. The cost effective biocomposites were then fabricated by melt blending of 70 wt% NaOH treated OPMFs and 30 wt% PBS in a Brabender internal mixer followed by hot-press moulding. The mechanical performance of the biocomposites was evaluated. The results showed that biocomposite with OPMF treated at 5% NaOH solution and 3h exhibited highest improvements in tensile strength (30%), tensile modulus (105%) and elongation at break (16%) in comparison to those of others alkali concentration or soaking time and untreated OPMF. In addition, enhancements of 17, 11 and 8% respectively in impact strength, flexural strength and flexural modulus were also recorded. These enhancements were attributed to the improved interfacial adhesion of NaOH treated OPMF and PBS as evident by scanning electron micrograph.