BUKTI KORESPONDENSI

Judul Artikel	Computer simulations on vibration control of a flexible single-link manipulator using finite-element method
Penulis Utama dan Korespondensi	Abdul Kadir Muhammad
Jenis Artikel	Konferensi Internasional
Nama Konferensi	The 19 th International Symposium on Artificial Life and Robotics (AROB 2014)
Waktu Pelaksanaan	22 - 24 Januari 2014
Tempat Pelaksanaan	B-Con Plaza, Beppu, Oita, Japan.

AROB 19th 2014 Abstract Submission Confirmation Mail

ISAROB <arobsecr@isarob.org> Kepada:y861008b@mails.cc.ehime-u.ac.jp Jum, 13 Sep 2013 jam 14.36 Dear Mr. Abdul Kadir Muhammad,

We would like to express our gratitude for your submission to AROB 19th 2014. The information you have entered is described later. The notification of the acceptance will arrive at you around October 1, 2013.

We are looking forward to seeing you in Beppu, Oita, Japan.

Sincerely yours,

AROB 19th 2014 Program Chair: Kazushi Nakano General Chair: Hiroshi Tanaka

Submission Number: 1910039

Title:

A vibration control scheme of a single-link flexible manipulator using finite element method

Abstract:

Employment of flexible manipulators are recommended in the industrial applications, in order to accomplish high performance requirements such as high-speed, safe operation, increasing of positioning accuracy, less weight and lower energy consumption. However, a flexible manipulator usually cannot be controlled because of its inheriting flexibility. Deformation of the flexible manipulator when it is operated must be considered in the control. Its controller system not only should deal with its motion but also vibration due to the flexibility.

The purposes of this research are to formulate the equations of motion of the system, to develop the computational codes by a finite-element method in order to perform dynamics simulations with vibration control and to propose an effective control scheme of a single-link flexible manipulator. The system used in this paper consists of an aluminum beam as a flexible link, a clamp-part, a servo motor to rotate the link and a couple of piezoelectric actuator to control vibration. Computational

codes on time history responses, FFT (Fast Fourier Transform) processing and eigenvalues eigenvectors analysis were developed to calculate the dynamic behavior of the link. Furthermore, a control scheme was designed to suppress the vibration by the piezoelectric actuators. A proportionaldifferential controller was designed and demonstrated its performances. The calculated results of the controlled single-link manipulator revealed that the vibration of the flexible manipulator can be controlled effectively.

Types of Presentation: Oral(General Session)

Topic 1st Choice: Control techniques 2nd Choice: Robotics

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[AROB19th 2014] Notification of Acceptance

Yahoo/Email Masuk

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Rab, 9 Okt 2013 jam 14.45

Dear Authors,

I am pleased to inform you that your abstract has been accepted. You are able to download your Letter of Acceptance from https://isarob.org/symposium/index.php?main_page=paper_list.

Please submit the following documents via https://isarob.org/symposium/index.php?main_page=paper_list by November 14, 2013.

- Final Camera-Ready Manuscript in PDF,
- Copyright Form.

Please download the Copyright form and other documents from the following page. <u>http://isarob.org/symposium/index.php?main_page=authors_kit</u>

When you submit these documents, you need to input an abstract for the symposium brochure and Brief Bio. Deadline for early registration is November 1, 2013. Please read registration instruction and register from http://isarob.org/symposium/index.php?main_page=regist_info

If you have any questions or problems, please let us know. We really appreciate your cooperation.

Yours sincerely,

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