



TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES
Manila, Philippines



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NIHON UNIVERSITY
Tokyo, Japan

present this

Statement of Appreciation

to

JONA VAL T. CASIDSID

*in appreciation for his/her contribution in strengthening the
Mechanical Engineering and Civil Engineering profession by serving as*

PAPER PRESENTER

for the Paper entitled

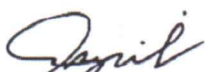
**Preliminary Investigation on Tiger Grass Pollen as an Alternative
Building Insulation Material**

for the

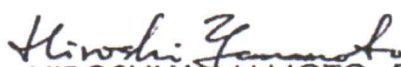
**6th Pacific-Asia Conference on Mechanical Engineering
6th International Conference on Civil Engineering
(PACME/ICCE 2017)**

held on August 29-31, 2017 at the Century Park Hotel, Manila Philippines

Given this 30th day of August 2017


ADORA S. PILI, Ph.D.
President

Technological University of the Philippines


HIROSHI YAMAMOTO, Dr. Eng.
Dean of College of Science and Technology
Nihon University



TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES
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NIHON UNIVERSITY
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present this

Certificate of Participation

to

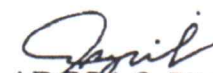
JONA VAL T. CASIDSID

*in appreciation for his /her contribution in strengthening the
Mechanical Engineering and Civil Engineering profession by way of active participation in the
Conference's Technical Session*

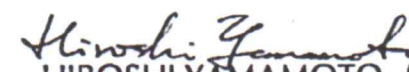
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6TH PACME ICCE

6TH PACIFIC - ASIA CONFERENCE ON
MECHANICAL ENGINEERING (6PACME)
and
6TH INTERNATIONAL CONFERENCE ON
CIVIL ENGINEERING (6ICCE)

*“Mechanical and Civil Engineering:
A Pathway towards Global Integration”*

**August 29 - 31, 2017
Century Park Hotel
Malate, Manila, Philippines**

Sponsors:



6TH INTERNATIONAL CONFERENCE ON CIVIL ENGINEERING

TECHNICAL SESSION

Day 2, August 30, 2017

Session	(A3) Environmental Engineering	(B3) Transportation System	(C3) Construction Engineering
10:30-10:50	EFFICACY OF MALUNGGAY (MORINGA OLEIFERA) POWDERED SEEDS AS A NATURAL COAGULANT FOR THE PRIMARY TREATMENT OF PRINTING WASTEWATER Teodinis P. Garcia Technological University of the Philippines	An ANALYSIS ON IMPACT OF ROUNDABOUT GEOMETRIC ELEMENTS ON DRIVING BEHAVIOR Keisuke Yoshioka Nihon University	PROPERTY CHARACTERIZATION OF MORTAR UTILIZING NEW AND RECYCLED PLASTER OF PARIS AS PARTIAL SUBSTITUTE TO CEMENT Edmundo C. Dela Cruz Technological University of the Philippines
10:50-11:10	REHABILITATION AND IMPROVEMENT OF FLOODED SEPTIC TANK IN RESIDENTIAL HOUSEHOLD Elpidio T. Balais, Jr. Technological University of the Philippines	AN ANALYSIS ON DISCHARGING BEHAVIOR OF BICYCLES FOR ESTIMATING BICYCLE'S SATURATION FLOW RATE AT SIGNALIZED INTERSECTIONS Eri Aoyama Nihon University	INFLUENCE OF ELECTRIC ARC FURNACE SLAG AS PARTIAL FINE AGGREGATES REPLACEMENT ON THE PROPERTIES OF POLYMER CONCRETE Marjun B. Macasilhig Technological University of the Philippines
11:10-11:30	TESTING OF SETTLING TANK DESIGNED TO REMOVE HEAVY METALS AND SUSPENDED SOLIDS FROM SMALL SCALE GOLD MINING WASTEWATER Jessie O. Samaniego University of the Philippines	STUDY ON TRANSPORTATION DEMAND ESTIMATION IN CONSIDERATION OF FEEDER MODE FOR BRT Akiho Hatakeyama CTI Engineering International Co., Ltd	MECHANICAL PROPERTIES OF FLY ASH-BASED GEOPOLYMER CONCRETE WITH CRUMB RUBBER TIRE AND WASTE GLASS POWDER Melito A. Baccay Technological University of the Philippines
11:30-11:50	MODELING SEDIMENT YIELD USING ARCSWAT AND ANALYZING THE MOST PROMINENT REMEDIAL MEASURES: CASES OF MELKA WAKENA RESERVOIR, ETHIOPIA Dereje Tolosa Mada Walabu University, Bale Robe, Ethiopia		PRELIMINARY INVESTIGATION ON TIGER GRASS POLLEN AS AN ALTERNATIVE BUILDING INSULATION MATERIAL Jona Val T. Casidsid Romblon State University, Philippines

- **PRELIMINARY INVESTIGATION ON TIGER GRASS POLLEN AS AN ALTERNATIVE BUILDING INSULATION MATERIAL**

JONA VAL T. CASIDSID, REYNALDO PEREZ RAMOS, PHD

Tiger Grass (*Thysanolaena maxima*) pollen is disregarded as a valuable agricultural waste; thus this study investigates its potential and beneficial uses as an alternative building insulation material with arrowroot starch as binder. Samples were prepared with the following mix proportions. Mixture A: 250 grams - tiger grass pollen and 100 grams - arrowroot starch which is equivalent to 40% of the tiger grass pollen weight. Mixture B: 250 grams - tiger grass pollen and 125 grams - arrowroot starch which is equivalent to 50% of the tiger grass pollen weight. Mixture C: 250 grams - tiger grass pollen with 150 grams - arrowroot starch which is equivalent to 60% of the tiger grass pollen weight. The samples were air-dried for 10 days. The thickness of the particleboards ranges from 8 mm to 10 mm. Based on the tests conducted for acoustic properties, thickness swelling, water absorption, and thermal conductivity, Mixtures B and C demonstrated acceptable results having met the allowable limit values.

Keywords: Tiger Grass pollen, insulation material, particle board, arrowroot starch, building insulation
Iloilo State University, Philippines

(C4) CONSTRUCTION ENGINEERING

- **FASTENINGS FOR THE REHABILITATION OF HISTORICAL STRUCTURES**

J. KUNZ, A. DEL MUNDO, P. JORILLO, JR., V. SORIANO, JR.

Monuments and ancient buildings clearly represent a valuable historical heritage. In Italy, the Colosseum, Pisa Tower and Assisi Church are just some examples. In the rehabilitation of historical buildings, typical problems without standardized solution for the designer include fixings to old masonry structures. As the strengths of each masonry structures are different, there are usually no technical data available in the planning process. If damages from earthquakes need to be repaired, the estimation of the fixing's base material quality becomes especially difficult. Therefore, the design will often include on-site testing.

Typical applications includes enlarging foundations, strengthening existing walls, connecting new walls to existing ones or repairing structural deficiencies by steel reinforcing structures. This paper gives examples, how such fastening problems were solved in the past.

In Mortara Tower rehabilitation, cracked masonry needed to be rehabilitated. The masonry was reinforced with reinforcement bonded into drilled holes. Moreover, steel structures were fixed to the inside in order to ensure stability.

La Fenice Theatre, one of the most important buildings in Venice, was destroyed by fire more than ten years ago. New wooden beam floors needed to be fixed to the remaining walls. For esthetical reasons, it was not possible to create large niches to support the beams. After a jobsite tests campaign, adhesive anchors were considered the best solution for fastening the new floors.

The vaults of San Christoforo Abbey needed to be strengthened. In this case a concrete overlay to the existing vault was chosen. The paper will show some details how the connecting (interface shear) reinforcement was designed and put in place.

Keywords: adhesive anchors; on-site testing; connecting reinforcement; strengthening; design