

ALVA'S INSTITUTE OF ENGINEERING
AND TECHNOLOGY, MOODBIDRI



KUMOMOTO UNIVERSITY MOU

Activity Report

2022-23

PARTICIPATION AND PUBLICATION PROGRAM

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Affiliated to Visvesvaraya Technological University, Belagavi Approved by AICTE,
New Delhi & Recognised by Government of Karnataka)
Shobhavana Campus, Mijar – 574225, Moodbidri.
Dakshina Kannada, Karnataka, India.



ALVA'S
Education Foundation®

1 Year Complete
(19-6-2022 to 20-9-2023)

Report on
Activities executed
in Association with
Alva's Institute of Engineering and Technology
and
Kumamoto University, Japan



Kumamoto University

Kumamoto University, Japan

Prepared by

Dr. Satyanarayan

Professor and Head

Department of Mechanical Engineering

Alva's Institute of Engineering and Technology


PRINCIPAL

Alva's Institute of Engg. & Technology,
Mijar, MOODBIDRI - 574 225, D.K.

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Student Exchange Agreement
between

Faculty of Advanced Science and Technology,
Graduate School of Science and Technology, and
Faculty of Engineering,
Kumamoto University
and
Alva's Institute of Engineering & Technology



Following the signing of a Basic Agreement on Academic Exchange Program between Faculty of Advanced Science and Technology, Graduate School of Science and Technology, and Faculty of Engineering, Kumamoto University, Japan, and Alva's Institute of Engineering & Technology, India, both parties conclude an Agreement on Student Exchange.

1. Duration of Stay

Duration of stay for students of both parties shall not exceed one academic year, and will normally start in February or August for the University of Alva's Institute of Engineering & Technology and in April or October for Kumamoto University.

2. Number of Exchange Students

Each party will normally accept up to a maximum of 2 students under this Agreement yearly. This number can be modified, if necessary, based on the discussion between both the parties.

3. Selection of Exchange Students

The home university will normally recommend most suitable students to the host university based on language ability and academic excellence.

4. Enrollment of Exchange Students

- (a) Students of Kumamoto University will register as Alva's Institute of Engineering & Technology exchange students and can attend lectures, seminars, and tutorials. Graduate students can also attend research projects.
- (b) Students of Alva's Institute of Engineering & Technology will register as Kumamoto University exchange students and can attend lectures, seminars, and tutorials. Graduate students can also attend research projects.
- (c) Participating students will be subjected to the regulations of the host university.

5. Study Program and Evaluation

Each student will determine their study program at the host university in consultation with academic advisers of both host and home universities. Academic performance shall be evaluated according to the rules of the host university.

6. Academic Record and Accreditation

Each student will submit to the home university the academic record obtained at the host university and it will be accredited according to the rules of the home university.

7. Tuition

Each student shall be exempted from the payment of any entrance examination fees, admission fees and tuition fees of the host university.

8. Accommodation

The host university will assist students in finding accommodation at a reasonable cost.

9. Financial Responsibility

Exchange students will be responsible for their own expenses, including travel expenses, accommodation costs and health care fees.

10. Intellectual Property Rights

This Agreement shall not be construed as any transfer, assignment or infringement of any intellectual property rights between both parties.

11. Duration

This Agreement is effective from the date of signing, and remains effective until the expiration of the Agreement on Academic Exchange.

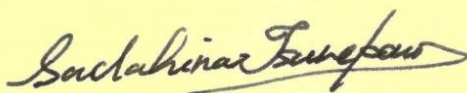
12. Amendment/Termination

This Agreement may be amended or terminated by mutual consent, if proposed by either party, by giving at least six months' notice in writing to the other party.

13. This Agreement is written in English and signed in duplicate by both parties. It may be translated into other languages for reference purposes.

Faculty of Advanced Science and Technology,
and Faculty of Engineering
Kumamoto University, Japan

Alva's Institute of Engineering & Technology
India



Dean: Prof. TSUREKAWA Sadahiro

Date: June 19th, 2022

Graduate School of Science and Technology
Kumamoto University, Japan



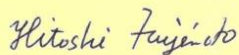
Principal Peter Fernandes

Date: June 19th, 2022

PRINCIPAL

**Alva's Institute of Engg. & Technology,
Nijjar. MOODBIDRI - 574 225, D.K**

← Please sign here



Dean: Prof. FUJIMOTO Hitoshi

Date: June 19th, 2022



Agreement on Academic Exchange
between
Faculty of Advanced Science and Technology, and
Institute of Industrial Nanomaterials
Kumamoto University
and
Alva's Institute of Engineering & Technology



Faculty of Advanced Science and Technology and Institute of Industrial Nanomaterials, Kumamoto University, Japan, and Alva's Institute of Engineering & Technology, India, are signing this Agreement in order to promote friendship and academic exchanges.

- 1) Both parties agree to an academic exchange in various areas of education and research.
- 2) Both parties will make an effort to exchange professors, researchers, administrative and professional personnel and students, and also exchange research materials and publications.
- 3) Both parties will make an effort to promote the exchange but will respect the independence of opinion to their mutual benefits. Specific details on the implementation of particular exchanges noted above and results from the agreement shall be negotiated between the two institutions subject to approval by each institution.
- 4) This Agreement shall not be construed as any transfer, assignment or infringement of any intellectual property right between both parties.
- 5) This Agreement will remain effective for five years from the date of signing. It may be renewed by mutual consent, if proposed by either party.
- 6) This Agreement may be amended or terminated by mutual consent, if proposed by either party, by giving at least six months' notice in writing to the other party.
- 7) This Agreement is written in English and signed in duplicate by both parties. It may be translated into other languages for reference purposes.

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Faculty of Advanced Science and Technology,
Kumamoto University, Japan



Dean: Prof. TSUREKAWA Sadahiro

Date: June 19th, 2022

Institute of Industrial Nanomaterials,
Kumamoto University, Japan



Director: Prof. IDA Shintaro

Date: June 19th, 2022

Alva's Institute of Engineering & Technology,
India



Principal Peter Fernandes

Date: June 19th, 2022

PRINCIPAL

**Alva's Institute of Engg. & Technology,
Nijur. MOODBIDRI - 574 225, D.K.**

← Please sign here



AIET Scholars Participated and Presented Research paper in
The 17th International Student Conference on
Advanced Science and Technology (ICAST)
during December 1 – 2, 2022 (**Online**)



Kumamoto University

Organized by

The Global Joint Education Center for Science and Technology
(GJEC) of Graduate School of Science and Technology (GSST), *Kumamoto University, Japan*

Research Scholar and Students participation in ICAST 2022

AIET students from the department of Mechanical, Civil, Electronics and Communication Engineering and Department of Business Administration were participated and presented paper in 17th International Student Conference on Advanced Science and Technology (ICAST 2022), during 1 – 2 December, 2022, organized by The Global Joint Education Center for Science and Technology (GJEC) of Graduate School of Science and Technology (GSST), Kumamoto University, Japan (Online mode). The following papers were presented by the students

SL No	Title of the Paper presented	Presenter
1	Assessment of Thermal Contact Resistance for low melting Alloys	Mr. Kumar Swamy M C (Ph.D, Research Scholar, ME)
2	An Influence of Mould Geometries on Mechanical Properties of Solidified Aluminium Alloy – A Simulation Study	Mr. Chiranth HS (UG Scholar, ME)
3	3-D Modeling of MEMS based Micro-cantilever Vibration Sensor (Micro-cantilever Vibration Sensor)	Mr. Jeevan C.M (UG Scholar, ECE)
4	Study of thermal resistance on interface materials	Mr. Akshar N (UG Scholar, ECE)
5	A Study on Impact of Cost and Perceived Benefits on Demand for Electric Vehicles	Mr. Punith K J (PG, Research Scholar, MBA)
6	Comprehensive Study On Coastal Aquifers In Kundapura, Udupi District	Mr. Ameer Hussain (UG Scholar, CV)
7	Comparative Studies On The Marshall Properties Of Plain And Crumb Rubber Modified Bituminous Mix On DBM Grade- I	Mr. Vinay Kumar R Kalappanavar (UG Scholar, CV)



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Certificate

This is to certify that

Kumar Swamy M C

Alva's Institute of Engineering and Technology

gave a presentation in Research Session of

***the 17th International Student Conference on Advanced
Science and Technology (ICAST) Online***

December 1 - 2, 2022



*Prof. Hitoshi FUJIMOTO
Dean, Graduate School of Science and Technology
Kumamoto University, Japan*

Certificate

This is to certify that

Chiranth HS

Alva's Institute of Engineering and Technology

gave a presentation in Research Session of
***the 17th International Student Conference on Advanced
Science and Technology (ICAST) Online***

December 1 - 2, 2022



Hitoshi Fujimoto

Prof. Hitoshi FUJIMOTO
Dean, Graduate School of Science and Technology
Kumamoto University, Japan

Certificate

This is to certify that

Jeevan C.M

Alva's Institute of Engineering and Technology

*gave a presentation in Research Session of
the 17th International Student Conference on Advanced
Science and Technology (ICAST) Online*

December 1 - 2, 2022



Hitoshi Fujimoto

*Prof. Hitoshi FUJIMOTO
Dean, Graduate School of Science and Technology
Kumamoto University, Japan*

Certificate

This is to certify that

Akshar N

Alva's Institute of Engineering and Technology

*gave a presentation in Research Session of
the 17th International Student Conference on Advanced
Science and Technology (ICAST) Online*

December 1 - 2, 2022



Hitoshi Fujimoto

Prof. Hitoshi FUJIMOTO
Dean, Graduate School of Science and Technology
Kumamoto University, Japan

Certificate

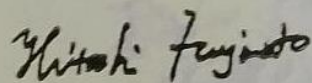
This is to certify that

Punith KJ

Visvesvaraya Technological University

*gave a presentation in Research Session of
the 17th International Student Conference on Advanced
Science and Technology (ICAST) Online*

December 1 - 2, 2022



*Prof. Hitoshi FUJIMOTO
Dean, Graduate School of Science and Technology
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Certificate

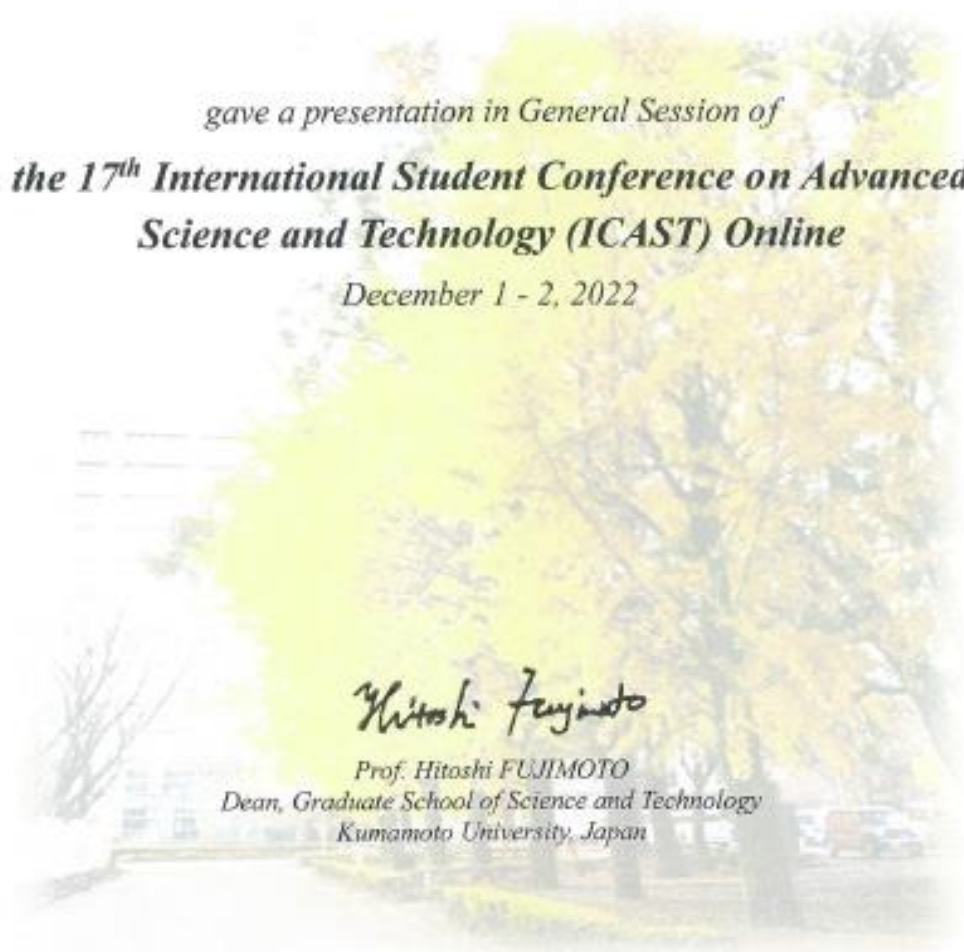
This is to certify that

Ameer Hussain

Visvesvaraya Technological University

*gave a presentation in General Session of
the 17th International Student Conference on Advanced
Science and Technology (ICAST) Online*

December 1 - 2, 2022



Hitoshi Fujimoto

*Prof. Hitoshi FUJIMOTO
Dean, Graduate School of Science and Technology
Kumamoto University, Japan*

Certificate

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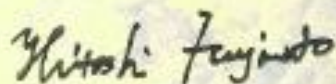
Vinaykumar R Kalappanavar

Visvesvaraya Technological University

gave a presentation in General Session of

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and

Engineering Faculty of Universitas Hasanuddin, *Makassar, Indonesia*

AIET students from the Department of Mechanical Engineering participated and presented their research papers in the 18th International Student Conference on Advanced Science and Technology (ICAST 2023), during 18 – 20 September, 2023, at Engineering Faculty of Universitas Hasanuddin, Makassar, Indonesia, organized by The Global Joint Education Center for Science and Technology (GJEC) of Graduate School of Science and Technology (GSST), Kumamoto University, Japan.

The following research papers were presented by the students

Sl. No	Title of the Paper presented	Presenter
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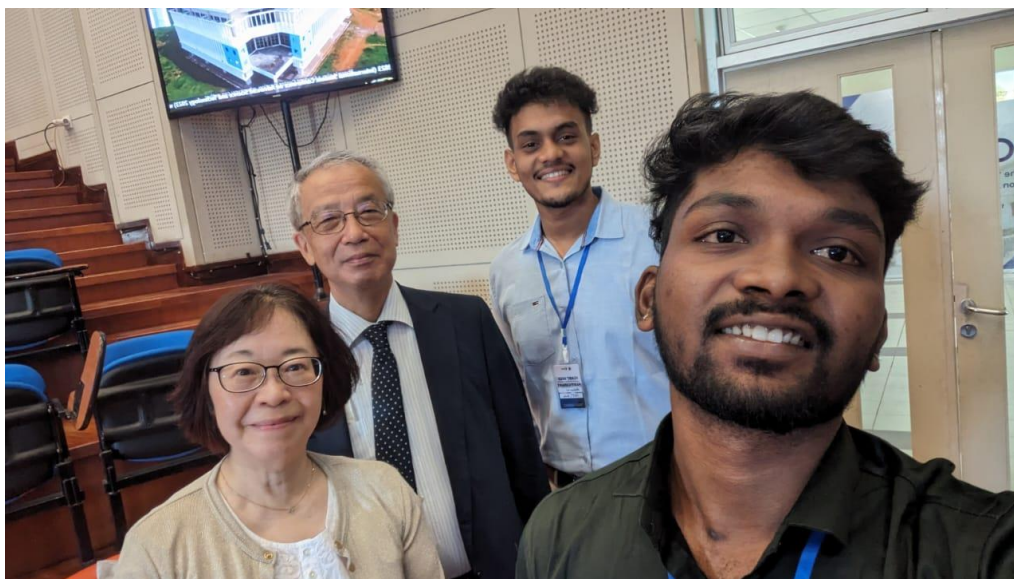
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Mr. Chiranth H S and Mr. Akshar N Final year Mechanical Engineering students at Universitas Hasanuddin, Makassar, Indonesia



AIET Students with ICAST 2023 Delegates and Participants from Japna, Indonesia and other countries at Universitas Hasanuddin, Makassar, Indonesia



AIET students Mr. Chiranth H S and Mr. Akshar N with Dr (Mrs.) Mitsuyo Kishida, Vice-President (Global Education), Dr. Hajime Miyauchi, Professor, Field of Electric Power and Control, Kumamoto University, Japan at Universitas Hasanuddin, Makassar, Indonesia,



Mr. Chiranth H S And Mr. Akshar N with the Director and Vice Directors of Hassanuddin University, Indonesia at Director's residency.



Satya Narayan <satyan.nitk@gmail.com>

Re: Submission of CHAPTER 1 Final Documents as per the CRC Press

Dr. Manjaiah M <manjaiah.m@nitw.ac.in>
To: Satya Narayan <satyan.nitk@gmail.com>

Mon, May 29, 2023 at 9:17 AM

Dear Dr. Satya Narayan,

Thank you for your email. Your chapter is accepted and sent for production. The ISBN number of the book is 9781032356358/Advanced Materials Processing and Manufacturing/CRC Press

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Alva's Institute of Engg. & Technology
Hijer, MOODEBIDRI - 574 225, CA

Chapter 1

Welding of Tin and Nickel Plates Using Controlled Underwater Shock Wave and Characterization of their interfaces

Authors:

Kambeyanda Rahul Machaiah (*Institute for Industrial Nano Materials, Kumamoto University, Kumamoto, 8608555, Japan* kprahul.pavan@gmail.com), <https://orcid.org/0009-0009-6072-7758>

***Satyanarayan** (Department of Mechanical Engineering, Alva's Institute of Engineering and Technology, Moodbidri, 574225, India satyan.nitk@gmail.com) <https://orcid.org/0000-0001-9895-8433>

Shigeru Tanaka (*Institute for Industrial Nano Materials, Kumamoto University, Kumamoto, 8608555, Japan* tanaka@mech.kumamoto-u.ac.jp) <https://orcid.org/0000-0003-4175-7029>

Daisuke Inao (*Department of Advanced Mechanical Systems, Kumamoto University, Kumamoto, 8608555, Japan,* inao@tech.eng.kumamoto-u.ac.jp) <https://orcid.org/0000-0001-8984-2842>

****Kazuyuki Hokamoto** (*Institute for Industrial Nano Materials, Kumamoto University, Kumamoto, 8608555, Japan* hokamoto@mech.kumamoto-u.ac.jp) <https://orcid.org/0000-0002-1656-9379>

Abstract

Most engineering applications require the properties of the metals to be enhanced. Welding dissimilar metals can meet this requirement. Among several welding techniques, explosive welding of dissimilar metals is regarded as one of the best solid-state welding methods in which a high quality metallurgical bond can be achieved. However, traditional explosive welding to be performed in an open atmosphere is unsuitable for the welding of thin metal plates particularly lower thickness (below 1 mm). Therefore in the present chapter by considering under-water explosive welding as one of the best techniques of welding, fusing of pure tin (Sn) plate of 0.3 mm thickness to nickel (Ni) plate of thickness 1 mm is discussed. To weld the Sn and Ni plates, the distance between the explosive and the center of the sample (called as water distance, D) was designed to be 35 mm, 40 mm, 45 mm and 50 mm respectively. It was observed that, Sn and Ni plates can be successfully welded under controlled underwater shockwaves. Further, interfacial morphology of Sn/Ni joints and their effect on hardness and bending strength for the Sn/Ni plates welded at different water distances were highlighted.

Key words: Explosive welding; Underwater shock wave; Sn/Ni; Interface; Water Distance