



CADEFEST News

The Project for Capacity Development of the Faculty of Engineering Science Technology, the National University Timor Lorosa'e (CADEFEST Project Phase II)



Newsletter Issue 9



Hera, December 2022

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Message from CADEFEST Project Manager

Welcome to the ninth edition of our project Newsletter!

Recently, we resumed many research and education activities. JICA Experts from Japanese supporting universities have been dispatched to the Hera campus and the technology transfer of Japanese professors to our faculty lecturers started again. Some of our faculty lecturers participated in short-term training programs, which were organized by Japanese supporting university professors under the JICA CADEFEST II project.

The equipment also arrived for research and education purposes to strengthen and improve our education and research environment. Utilizing those resources, our lecturers made a concerted effort to carry out their research and publish their results in the Timorese Academic Journal of Science and Technology (TAJST), Volume 5. We are sure that our faculty has now completely recovered from the COVID-19 restrictions. Most of the achievement indicators show that our project will be completed successfully by March 2023.

We are now preparing our next target to establish a graduate program as to provide advanced engineers for the development of our country. The role of the Faculty of Engineering, Science and Technology will be more significant.



Therefore, let us work together to improve our quality of research and education and to look to the future!

Adalfredo G. da S. Ximenes, M. Eng
Project Manager, CADEFEST Project Phase II
Dean, Faculty of Engineering Science and Technology-UNTL

Message from Japanese Supporting University Committee

I hereby express my sincere gratitude for your kind cooperation from all faculty staff. Now, the JICA CADFEST project phase II is approaching its end. Since 2016, we, the Japanese supporting universities, have supported the education and research activities and established several important research collaborations between the faculty and the Japanese universities.

One of our recent notable research outcomes was the flood survey for cyclone Seruja, which occurred on April 4, 2021. The survey data and analysis contributed to the development of hazard and inundation maps for the Timor-Leste government's disaster mitigation plan. For this flood survey, lecturers and students worked very hard to collect the data. Without their hard work, we could not have reached this useful and important research outcome. I am sure the Faculty of Engineering, Science and Technology can further contribute to national development through the academic fields. Keep up the good work!



Prof. Dr. Masahiko Sekine
Chairperson
Japanese Supporting
University Committee
CADEFEST Project Phase II

Message From Chief of Cooperation Unit

Welcome to our newsletter, the activities of the Cooperation Unit have also been very active during this period. We have had many collaborations with external partners and strengthened those relationships. Notably, the JICA experts, the professors from Japanese universities, returned to the Hera campus and carried out many research and education activities, which you can read about in this newsletter. As for the research outcomes, we successfully edited our academic journal – Timorese Academic Journal of



Domingos de Sousa Freitas M. Eng
Chief of Cooperation Unit, Vice
Dean Cooperation and Research
Affairs-FoEST

Science and Technology (TAJST) Volume 5. We continue to publish this journal every year to improve our research activities and share the outcomes with our academic society. Now, the faculty is planning to establish an engineering master's degree program. This course will be research thesis based. Therefore, our role of enhancement of research activities has become more important. The Cooperation Unit will continue to support various activities related to education and research. Kindly contact us if you have any ideas to promote, improve and/or expand our academic activities in the faculty of science and technology at UNTL. Let us work together!

Dispatch of Chief Advisor

On September 18, 2022, Prof. Koichi Shimakawa, Chief Advisor of JICA CADEFEST Project Phase II finally visited Timor-Leste after the lifting of the COVID-19 restrictions. He came to catch up on the project that will end on March 31, 2023.

According to his observations, we have achieved all our targets and now we need to consider embarking on new technical collaborations and discussing, for example, the establishment of a graduate program in the Faculty of Engineering Science and Technology–UNTL.

Prof. Shimakawa took the courtesy to meet with Dr. Víctor da Conceição Soares, Minister of Petroleum and Minerals and Prof. Dr. João Soares Martins, the rector of UNTL in order to report on his visit to Timor-Leste. In addition, Prof. Shimakawa met with the task force team members to discuss the plan for the establishment of a master's program.



Short Term Research Training in Japan (Group 1)

Activity of Short Term Training



From June to July 2022, Ms. Humbelina Viegas and Mr. Jose Mali Sura from the Civil Engineering department participated in a short-term training program in Yamaguchi University, and Mr. Vosco Pereira and Mr. Ferdinando Soares from the Informatics Engineering department participated in the short-term training program in Gifu University. The aim of this training was to enhance the knowledge of the lecturers through research and education.

Training Report

On August 24, Mr. Vosco and Mr. Ferdinando from the IT department and Ms.



Humbelina and Mr. Jose from the Civil Engineering department presented their results of the training and shared their experience with other lecturers in the engineering faculty.



Report Presentation

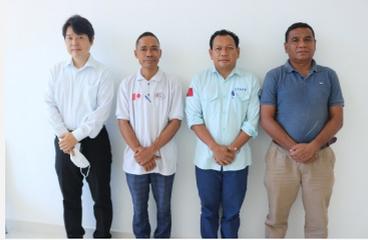
Training participants are expected to share their upgraded knowledge and experience through research and education activities in the Hera campus.

JICA Long Term Training

Two lecturers newly participated in the long-term training program “JICA Development Studies Program, Human Resource Development in Science and Technology Innovation (STI program),” which started in 2019. On May 18, 2022, Mr. Abreu Boavida, a lecturer from the Informatics Engineering department left for Japan to continue his master’s studies in the field of Computer



Mr. Abreu Boavida, Master Candidate
in Gifu University, Japan



Mr. Leandro Madeira Branco, PhD Candidate
in Yamaguchi University, Japan

Science. He started his online class in Timor-Leste on April 18, 2022 before he departed to Japan. He is expected to finish his degree in March 2024. Another participant, Mr. Leandro Madeira Branco, a lecturer from the Civil Engineering department, departed to Japan on October 19, 2022, to continue his PhD studies in Monitoring of Bridge. He is expected to finish his PhD in March 2026. Before his departure to Japan, he met with the dean, vice dean IV and Mr. Atsushi Takahashi, the JICA CADEFEST Project Phase II coordinator, to confirm his study plan and expectations from the faculty and the project.

Meetings

14th Steering Committee Meeting

On August 29, 2022, the 14th Steering Committee Meeting was held at Hera campus. This meeting was chaired by Mr. Adalfredo Guterres da Silva Ximenes, Dean of the Faculty of Engineering, Science and Technology–UNTL, and attended by Prof. Koichi Shimakawa, Chief Advisor of JICA CADEFEST Project Phase II, and the structure of the Faculty of Engineering, Science and Technology–UNTL. The aim of this meeting was to discuss the progress of the final year project and the preparation of the new master’s degree in the Faculty of Engineering, Science and Technology.



14th Steering Committee Meeting



The Steering Committee Member

Meetings

Keio University, SOI ASIA project

On September 19, 2022, a professor from Keio University visited the Faculty of Engineering, Science and Technology to discuss the cooperation between UNTL and Keio University to establish an information network with the Japanese universities and UNTL. This meeting was also attended by staff from JICA Timor-Leste office and a lecturer from the Electronics and Electrical department.



Keio University, JICA and FoEST UNTL Meeting

Task Force Team Meeting

On August 25, 2022, the task force team for the preparation of the master's course, led by Dr. Joaquim da Costa, had meeting with the chief advisor of JICA CADEFEST Project Phase II, Prof. Koichi Shimakawa. Dr. Joaquim da Costa presented the legal information for the course, the work timeline and the course development plan. There was also an exchange of views regarding the establishment of the master's course.



Task Force Team Meeting

Meetings

UNESCO Digital Library Meeting

On September 16, 2022, the staff of UNESCO visited the Hera campus and had a meeting with the lecturers from the Informatics Engineering department, Mr. Domingos, Vice Dean for Research and Cooperation Affairs, and the JICA CADEFEST Project Phase II coordinator. UNESCO has a plan to initiate the establishment of a digital library in UNTL. The faculty staff from the Informatics Engineering department explained the information system which they developed in the Hera campus and agreed to discuss this further.



Meeting with UNESCO

Visit of Minister of Petroleum and Mineral

On April 28, 2022, Minister of Petroleum and Minerals, his Excellency Dr. Victor da Conceição Soares, visited the Hera campus. During the visit, the Minister inspected the new weather station, which was provided by JICA CADEFEST Project Phase II. It is expected that the FEST academic research group will contribute to the crucial implementation of a renewable energy sector in Timor-Leste.



Handed the new automatic weather station



Meeting with Minister

Seminar

ICT for Girls

On July 28, 2022, the first ‘Girls in ICT’ seminar took place in Timor Plaza, Dili. The seminar was organized by the National Communication Authority (ANC), the International Telecommunication Union (ITU), JICA Timor-Leste, UNTL, the faculty of Engineering, Science and Technology, and the department of Informatics Engineering for female students. The seminar focused on access and safety and encouraged young girls to actively pursue a career in information technology. It was supported by JICA CADEFEST Project Phase II and other sponsors from Timor-Leste.



Discussion Panels



Opening Remarks by Chief Representative of JICA Timor Leste, Mr. Ko Goto



Girls Students from Senior High School

Seminar for TAJST

On October 27-28, 2022, the faculty of Engineering, Science and Technology–UNTL organized the Timorese Academic Journal Science and Technology (TAJST) seminar. The TAJST journal was launched in 2017 with the support of JICA CADEFEST Project Phase II. It is published annually and volume five is now being worked on and will be shared with the Timor-Leste academic society. This year 30 articles were submitted, and 25 papers have been accepted through peer reviews by professors in Japanese supporting universities. At the TAJST seminar the authors presented their submitted research paper and received feedback from the academics on how to further expand their research activities.



Opening Remarks by Prof. Masahiko Sekine

This seminar was organized as part of UNTL anniversary events in 2022. The participants discussed research outcomes and also celebrated UNTL’s anniversary. Mr. Masahiko Sekine, Chairperson of Japanese University Committee, also participated and made a keynote speech on flood disaster analysis in Timor-Leste. TAJST is expected to continue to publish after the completion of JICA CADEFEST Project Phase II.

Education Activity

Electronics and Electrical Engineering

On August 26, 2022, Prof. Mitsuo Yamaga from Gifu University and Dr. Cancio Monteiro, who works in the Electronics and Electrical department laboratory, held an online discussion on the contents of experimental class. They will continue their discussion in January 2023.



Dr. Cancio reviewing Experimental Class Contents with Prof. Yamaga

Civil Engineering

Prof. Hidehiko Kazama has been conducting online discussions with Mr. Francisco from the Civil Engineering department, faculty of Engineering, Science and Technology–UNTL. Prof. Kazama is supporting the research activities, especially for geotechnical engineering.



Mr. Francisco discussing with Prof. Hidehiko Kazama

Education Activity

Geology and Petroleum

From October to December Prof. Yuichi Sugai from Kyushu University held online discussions with Mr. Nene and Mr. Cornelio from the Geology and Petroleum department, faculty of Engineering, Science and Technology–UNTL. Professor Sugai has supported the petroleum engineering element through these online discussions.



Online discussion (Mr. Cornelio)

Mechanical Engineering

From October until December Prof. Minoru Yamashita from Gifu University conducted online discussions with Mr. Marfim, a lecturer from the Mechanical Engineering department, faculty of Engineering, Science and Technology–UNTL. Mr. Marfim submitted some research outcomes to volume five of TAJST following these online discussions.



Mr. Marfim and his research team

Special Lecturers

Geology Special Lectures

On April 25, 2022, three experts dispatched from different Japanese universities gave the special lecture in Hera campus auditorium. Prof. Soichi Kiyokawa from Kyushu University gave the lecture, “Whole Earth History, the Record of Mountain Building in Timor-Leste.” Prof. Atsuko Yamazaki from Kyushu University and the Director of KIKAI Institute for Coral Reef Sciences in Japan gave the lecture, “Ocean Geochemical Cycle and Carbonate Production.” Prof. Tsuyoshi Watanabe from Hokkaido University and the President of KIKAI Institute for Coral Reef gave the lecture, “Coral Reefs and Environmental Changes throughout Time, Past, Present and Future.”



Special Lecturer by Three Prof.



Special Lecturer by Prof. Kawamura

On August 15, 2022, Prof. Kawamura Kiichiro from Yamaguchi University gave the lecture, “Geology and Geohazards in Timor-Leste.”

These special lectures were attended by many students and lecturers from the Geology and Petroleum department. The students were excited to participate in these special lectures and many questions arose. This was a great opportunity for students to enhance their knowledge.

Special Lectures

Mechanical Special Lectures

On September 5, 2022, Prof. Ikuo Tanabe, a JICA expert who was dispatched from Sanjo City University, Japan, gave a special lecture with the theme of “Examples of Research and Development for the Future” at Hera campus auditorium. This special lecture was attended by students and lecturers from the Mechanical Engineering departments, faculty of Engineering, Science and Technology–UNTL. Students learned how to conduct research based on “Sustainable Development Goals (SDGs).” This was a particularly good opportunity for final year students writing their thesis to consider the development of our country based on SDGs!



Special Lecture by Prof. Ikuo Tanabe

Research Activity

Geology Experts Education Activities

JICA experts dispatched from Kyushu University, Prof. Shoichi Kiyokawa and Prof. Atsuko Yamazaki and Prof. Tsuyoshi Watanabe from Hokkaido University, supported lecturers from Geology and Petroleum Department. Some lecturers have learned how to operate the Scanning Electron Microscope (SEM) to analyze the samples. Other lecturers work with professors for cutting the suitable shape of corals to make analysis the age of the corals. Prof. Kawamura Kiichiro visited Bobonaro with lecturers to do the survey for land slide. These research results are expected to be published in the faculty Journal (TAJST) soon!



Field Survey



Professor Yamazaki and Professor Watanabe with Mr. Osaviko

Professor Kiyokawa with Ms. Jovita how to used SEM

Research and Teaching Activity



Field Survey

On September 7th, 2022, Prof. Tomonao Kobayashi from Gifu University and Prof. Hoshino Hideo from Sanjo City University visited to Hera Campus. They came as JICA experts to support Mechanical Engineering department, Faculty of Engineering Science and Technology-UNTL. Professors supported Lecturers of Mechanical Engineering department for their research and installation the software for weather station to collect the data and how to operate the experiment of laboratory. Prof. Tomonao Kobayashi with the lecturers from Mechanical department went to Baucau, for the installation of weather station. This is survey for renewable energy in Timor-Leste.



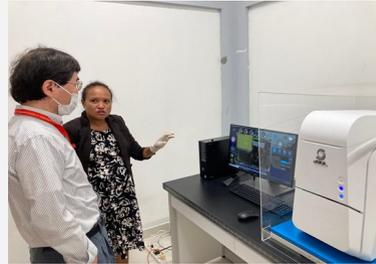
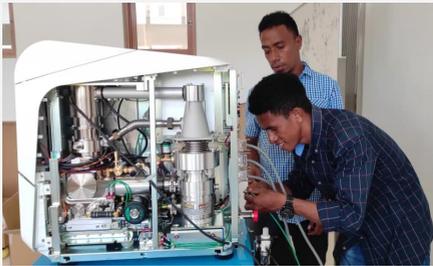
Activities of Expert dispatch in Mechanical Engineering department

The provision of Equipment

Scanning Electron Microscope Installation Training

On March 21 until March 29, 2022, the engineers from JEOL in Singapore provided virtual training for the Scanning Electron Microscope (SEM) installation. This training was attended by the lecturers from the Geology and Petroleum department, faculty of Engineering, Science and Technology–UNTL, and Prof. Shoichi Kiyokawa from Kyushu University.

During the one-week training, the lecturers learned how to set up the SEM device and some additional operations to utilize the SEM safely and efficiently. After the installation, they also learned how to analyse samples using the SEM.



SEM Installation Training

Rain Gauges and Water Level Sensors Installation



On July 18, 2022, the ceremony for the installation of rain gauges and water level sensors was held in the Civil Engineering laboratory. It was attended by staff from the JICA office in Dili, JICA CADEFEST Project Phase II, FoEST and the Civil Engineering department.

This equipment was installed by Midori Engineering Laboratory together with lecturers and students from the Civil Engineering department on seven sites for water level sensors in Dili and on eight sites for rain gauges. The equipment was provided by JICA CADEFEST Project Phase II and is expected to collect and accumulate the data for research for natural disaster mitigation and contribute to the early warning system for the citizens in Dili City.

Graduate Tracer Survey

On August 2022, the graduate tracer survey was conducted and the results are shown in the table below.

Graduate Year/Month	Graduates	Response (A)	No Response	Employed (B)	Unemployment	Employment rate ((B)/(A))
2016 Nov	101	27	74	21	6	78%
2017 May	67	31	36	28	3	90%
2017 Nov	94	40	54	30	10	75%
2018 May	87	39	48	34	5	87%
2018 Dec	80	45	35	35	10	78%
2019 Jun	92	67	25	53	14	79%
2019 Dec	87	56	31	48	8	86%
2020 Sep	61	31	30	17	14	55%
2021 May	33	17	16	12	5	71%
2021 Sep	26	9	17	5	4	56%
2022 Jan	93	38	55	9	29	23%
2022 Aug	91	88	3	8	80	9%

The employment rates for those who graduated before 2021 all achieved more than 50% , while new graduates still remain at the low rate of 9%.

Final year students are expected to prepare well to gain employment in order to improve this situation.

We would like to express here our appreciation to the graduates who cooperated in this tracer survey.

From the Editor

Thank you for reading this newsletter! I am especially happy to be able to publish volume 9 as many project activities were conducted after the lifting of the COVID-19 restrictions. Unfortunately, the next issue will be the last newsletter for this project. I hope this newsletter has helped to share information and to provide more ideas for promoting education and research activities in the future.



Goodbye till next issue!

JICA CADEFEST PROJECT PHASE II

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Up Coming Event

- ◆ Publication for TAJST Vol.5
- ◆ Final JCC Meeting
- ◆ Preparation for Master Course in FECT

PhD Handover Certificate

Dr. Valerio Gama, Lecturer of Mechanical Engineering department, UNTL, received his PhD certificate from his PhD supervisor, Prof. Dr. Ikuo Tanabe. Dr. Valerio successfully defended his PhD thesis through an online PhD defence in December 2020; however, he could not attend his graduation ceremony due to COVID-19 travel restrictions.

On August 15, 2022, his supervisor, Prof. Dr. Ikuo Tanabe visited the Faculty of Engineering, Science and Technology–UNTL with the PhD certificate for Dr. Valerio Gama and finally he received it! Congratulations, Dr. Valerio Gama!



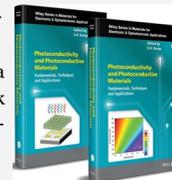
International Journal Publication

* Carlito Pinto¹ and Koichi Shimakawa^{3,2} “A compressed logistic equation on bacteria growth: inferring time dependent growth rate” Published 15 September 2022. @ 20212. © 2022 IOP Publishing Ltd Physical Biology, Volume 19, Number 6 Citation Carlito Pinto and Koichi Shimakawa 2022 Phys. Biol. 19 066003, DOI 10.1088/1478-3975/ac8c15.



* Abelito F. Belo, K. Shimakawa & Y. Sakaguchi “Transient photodarkening induced by a nanosecond pulsed laser in amorphous and liquid As₂Se₃: fractal characteristics in relaxation dynamics” Journal of Materials Science: Materials in Electronics volume 33, pages 22541–22548 (2022).

* Ruben J. Freitas and Koichi Shimakawa “Persistent Photocurrents and Defects” Book Chapter 13 (Photoconductivity and Photoconductive Materials, Edited by S.O. Kasap, WILEY)



The Editor is happy to receive suggestions and any comments to improve this newsletter!