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from Rice Husks

Ms. Yu-Ning, Chang (Alanda, Chang), Coordinator of Inbound Exchange Program,
Office of International Affairs, Providence University, Taiwan

ITS Rises in the Webometrics Ranking 2021

Institut Teknologi Sepuluh Nopember (ITS) has been ranked 3 in Webometrics 2021 country ranking. ITS ranking increased from the 6th position to the 3rd position in the country level. The world ranking increased significantly from 1840 to 1089. The Webometrics Ranking is published twice a year. The announcement is made in January and July. Webometrics uses both webometric and bibliometric indicators because it aims to rank universities, not the website of universities.

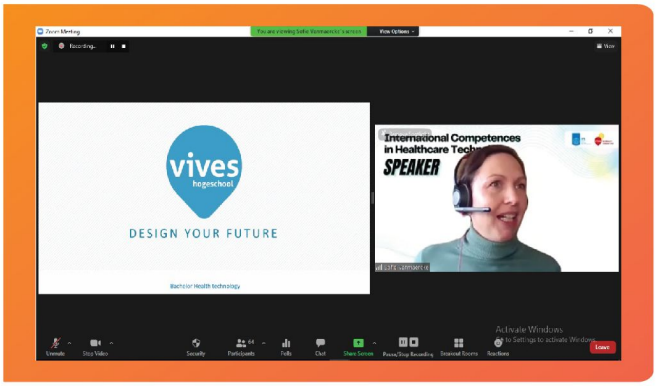
Webometrics
RANKING WEB OF UNIVERSITIES

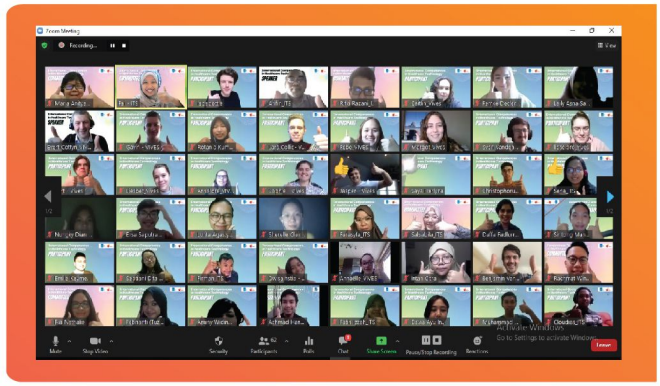
The current methodology used three indicators to evaluate the university performance, i.e., visibility, transparency (openness), and excellence. The indicator of presence has been discontinued. Visibility, transparency, and excellence are weighted 50%, 10%, and 40% respectively. The visibility indicator represents the number of external networks (subnets) linking to the institution's webpages (normalized and then the maximum value is chosen). Transparency (openness) is evaluated through the number of citations from the Top 210 authors (excl. top 20 outliers). The third indicator, excellence, represents the number of papers amongst the top 10% most cited in each one of the all 27 disciplines of the full database, using a five-year period.

Indonesia

ranking	World Rank	University	Det.	Impact Rank*	Openness Rank*	Excellence Rank*
1	810	Universitas Gadjah Mada		578	638	1500
2	1088	Institut Pertanian Bogor		679	698	2174
3	1089	Institut Teknologi Sepuluh Nopember		930	1063	1739
4	1315	Universitas Indonesia		396	5954	1245
5	1322	Universitas Airlangga		1100	971	2245

ITS Initiated International Competences in Healthcare Technology with VIVES





Manifesting community service through internationalization, Institut Teknologi Sepuluh Nopember (ITS) hand-in-hand with VIVES University of Applied School, Belgium in developing healthcare technology in Indonesia. The first meeting was conducted on 12 February 2021, to initiate the International Competences in Healthcare Technology program entitled Challenges & Opportunities of Healthcare Technology Innovation in Indonesia. The participants of this program consist of 31 ITS students from the Department of Biomedical Engineering and the Department of Industrial Product Design, and 17 VIVES students from the Department of Healthcare Technology.

In this program, the participants will be exploring the challenges and opportunities in healthcare technology in Indonesia. The participants will later create prototypes of healthcare technology for several hospitals in Surabaya. To enrich this program, there is a cultural session that provides an opportunity for VIVES students to get to know Indonesian culture through traditional dance performances and learn Bahasa with ITS students. This program is a series of 7 virtual meetings and the final meeting will be held on May 21, 2021.

ITS Lecturer Innovates Hybrid Robot to Assist Surgeons

Another innovation is coming from Institut Teknologi Sepuluh Nopember (ITS). Dr. Latifah Nurahmi, a lecturer from the Department of Mechanical Engineering recently invented a hybrid robot for medical surgeries in a project called Robot Operasi Reduksi Fraktur Sebagai Teknik Bedah Invasif Minimal. Dr. Latifah stated that this innovation has been developed since 2015.

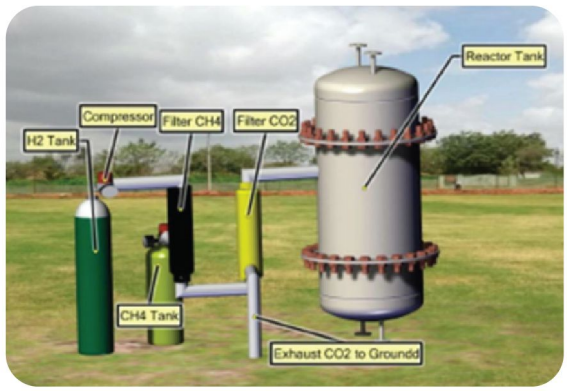
Parallel robots have actually been around in the medical field since the '90s. However, the parallel robot has very limited movement and it is only for a single-use. To overcome these disadvantages, Dr. Latifah invented a hybrid robot. Specifically, it is a combination of two parallel robots.

This hybrid robot has wider movement than the parallel robots. In this project, she collaborated with the Department of Mechanical Engineering from the National Central University (NCU), Taiwan. This project is not intended to replace the role of the surgeons, but to assist them in a surgery that requires high accuracy. Dr. Latifah took home an award at the L'Oreal-UNESCO for Women in Science 2020 for this innovation. Through this award, Dr. Latifah wants to empower young women to take part and be involved in science and technology.

ITS Students Invented Renewable Electrical Energy from Rice Husks

The electrical energy demand is continuously increasing. However, most of the electrical energy in Indonesia has still been sourced from non-renewable energy. Therefore, Institut Teknologi Sepuluh Nopember (ITS) students invented a biohydrogen electric generator from the rice husks. The team consists of Ibrahim Fatahillah Hizbul Islam, Ahmad Fahmi Prakoso, Muhammad Wildan Abyan from the Department of Material and Metallurgical Engineering, Mikael S. K. Raditya Dwiatmaka from the Department of Chemical Engineering, and Deden Eko Wiyono from the Department of Industrial Chemical Engineering.

The rice husks are initially processed with NaOH to degrade lignin and hydrolyzed by Trichoderma reesei and Aspergillus niger to convert the cellulose into glucose. From the initial process, the rice husks are then fermented using Clostridium butyricum. The hydrogen gas is then converted into electrical energy using a fuel cell. The Antasena's Biohydrogen Electric Generator can produce hydrogen gas until 5.72 liters per hour, which means this invention will be able to supply the electricity needs of 16 houses with an electricity capacity of 500 Watt. With this invention, the ITS Antasena Team won a gold medal at the Indonesia International Applied Science Project Olympiad (I2ASPO) which was held in December 2020.



Voice of Partner

Ms. Yu-Ning, Chang (Alanda, Chang),
Coordinator of Inbound Exchange Program, Office of International Affairs, Providence University, Taiwan

"In April 2019, I had an opportunity to visit Institut Teknologi Sepuluh Nopember (ITS) in Surabaya for the Inbound Staff Mobility program. It was a program that facilitated international non-academic staff to do cultural exchange among university partners. ITS is one of few universities that has a concern in developing non-academic staff to get international exposure. Therefore, I am so honored to be part of this program.

It was my first-time visiting Indonesia. I felt lucky to join the Inbound Staff Mobility program because I got to know Indonesian cultures. Within this program, ITS had broadened my connections because I met so many colleagues from various universities. ITS also has very enthuastic and generous staff and students. The campus is full of energy because of their lively smiles. Their team-work is the one I am most impressed with. They gave their best to make the program successful. I look forward to visiting ITS again once the pandemic is over."