

SDG REPORT



Institut Teknologi Sepuluh Nopember (ITS)



2022



FOREWORD

PROF. DR. IR. MOCHAMAD ASHARI, M. ENG., IPU, A.ENG.

RECTOR OF INSTITUT TEKNOLOGI SEPULUH NOPEMBER

Welcome to Institut Teknologi Sepuluh Nopember (ITS) Surabaya, Indonesia, a leading research university that excels in orchestrating technology, research, and engineering with design and art, making them the foundations for advancing humanity.

We made this report as a brief note of our contributions and efforts in making our motto, *Advancing Humanity*, tangible. Our efforts in advancing humanity are in line with the UN's mission, as summarized in the 17 points of the Sustainable Development Goals, and it is a huge task that requires strong synergy from our internal stakeholders and reciprocal partnership with global partners.

We are grateful, especially in these two years when the pandemic took place, that the partnership with numerous global institutions bore significant contributions in maintaining quality education and research; and also pushed opportunities for innovations.

We are proud that our synergy with industry and society produced positive results, especially in Goal 7, *Affordable and Clean Energy*. As for this year, we were successful in developing the potential prototypes of power plants and electricity supply for underprivileged areas, creating concrete innovations as solutions to reduce carbon emissions, and expanding partnerships with industries to implement renewable energy-based projects.

We are happy to share this report for reference and inspiration. Along with this, we invite anyone to discuss, synergize, and innovate with us.

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2022

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2022

1 NO POVERTY



1 NO POVERTY



“Over 10% of the world’s population live in extreme poverty, unable to fulfill the most basic needs such as food, health, education, access to clean water and sanitation. Universities need to be able to demonstrate how they are helping to address this problem through their work.”

(THE Impact Rankings)

19,944

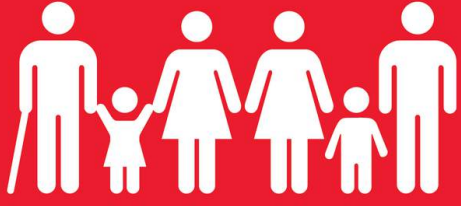
Number of students

3,572

Number of low income students receiving financial aid



1 NO POVERTY



UNIVERSITY ANTI-POVERTY PROGRAMMES

ITS Supports Students from Low-Income Family

In commemoration of the 62nd Anniversary of Institut Teknologi Sepuluh Nopember (ITS), the university inaugurated the ITS Endowment Fund Plaque and distributed scholarships to alleviate the financial burden of low-income students. With support from alumni, parents of ITS students, the community, and other stakeholders, a total of 58 billion rupiahs has been successfully raised for the endowment fund. During the 62nd Anniversary celebration, scholarships totaling IDR 204 million were awarded to 62 students. The unveiling of the plaque is expected to encourage further contributions from diverse sources to participate in the ITS Endowment Fund Inscription Program.



COMMUNITY ANTI-POVERTY PROGRAMMES

ITS Community Service Helps in Developing Village Potential

As part of its commitment to the Tri Dharma of Higher Education and empowerment of the Indonesian people, ITS is actively involved in developing the potential of villages. Through the Center for Public Studies of Business and Industry (PKKPBI), the ITS community service team (Abmas) recently conducted a Focus Group Discussion (FGD) with the residents of Kebonunggul Village, Mojokerto, to explore the natural and human resources that can be developed. Eight innovative Abmas projects were initiated by eight ITS teams, targeting different sectors such as entrepreneurship with the establishment of a spin-off Kebonunggul Cafe, agriculture with the creation of Smart Agriculture Farming, marketing efforts to enhance branding for micro, small, and medium enterprises (MSMEs), and other innovative works. ITS is actively working towards making a positive impact on village development.



2 ZERO
HUNGER



2 ZERO HUNGER



“The ability to feed the world is a key element of sustainable development. If done right, agriculture, forestry and fisheries can provide nutritious food for all. At the same time it can ensure rural development with people at the centre of the process, supporting the incomes of those who rely on agriculture. Universities need to be able to demonstrate how they are contributing to end hunger, achieve food security and improved nutrition and promote sustainable agriculture.”

(THE Impact Rankings)

131.5 ton

Total food waste

22,942

Campus population

4,301

Number of graduates

0

Number of graduates from agriculture and aquaculture courses including sustainability aspects



2 ZERO HUNGER



HEALTHY AND AFFORDABLE FOOD CHOICES ITS Central Cafeteria as the First Best in the National KHAS Zone

The KHAS Zone Program is a collaborative effort between the Indonesian Ministry of Health and the National Committee for Sharia Economic and Finance, with the goal of promoting the availability of halal food while ensuring food safety and health. The ITS cafeteria has been certified by the Surabaya City Health Office for meeting hygiene and sanitation standards. In addition, the cafeteria has implemented innovative measures such as facility renovations to improve comfort, the creation of a VIP room for academic meetings, and a cashless payment system for efficient financial management. This system allows for organized income tracking for food stall sellers and ITS, and enables DKPU to monitor the sales performance of the cafeteria's food stalls.



NATIONAL HUNGER

ITS Collaboration to Help Local Farmers

One of the ways ITS addresses hunger is by supporting local farmers. This is done through socialization efforts by one of ITS' teams called SIPETA, an information technology-based application that maps the potential of agricultural land to improve cultivation effectiveness, efficiency, and agricultural system development. SIPETA is a collaboration between ITS, Universitas Brawijaya (UB), the Department of Agriculture of Jombang Regency, and the Joint Farmer Group (Gapoktan) of Pojok Kulon. This application provides residents of Jombang Regency with information on mapping agricultural land potential and offers features such as weather forecasts and early warning information on pest attacks. The goal is to assist farmers in improving their agricultural systems to be more effective and efficient.



2 ZERO HUNGER

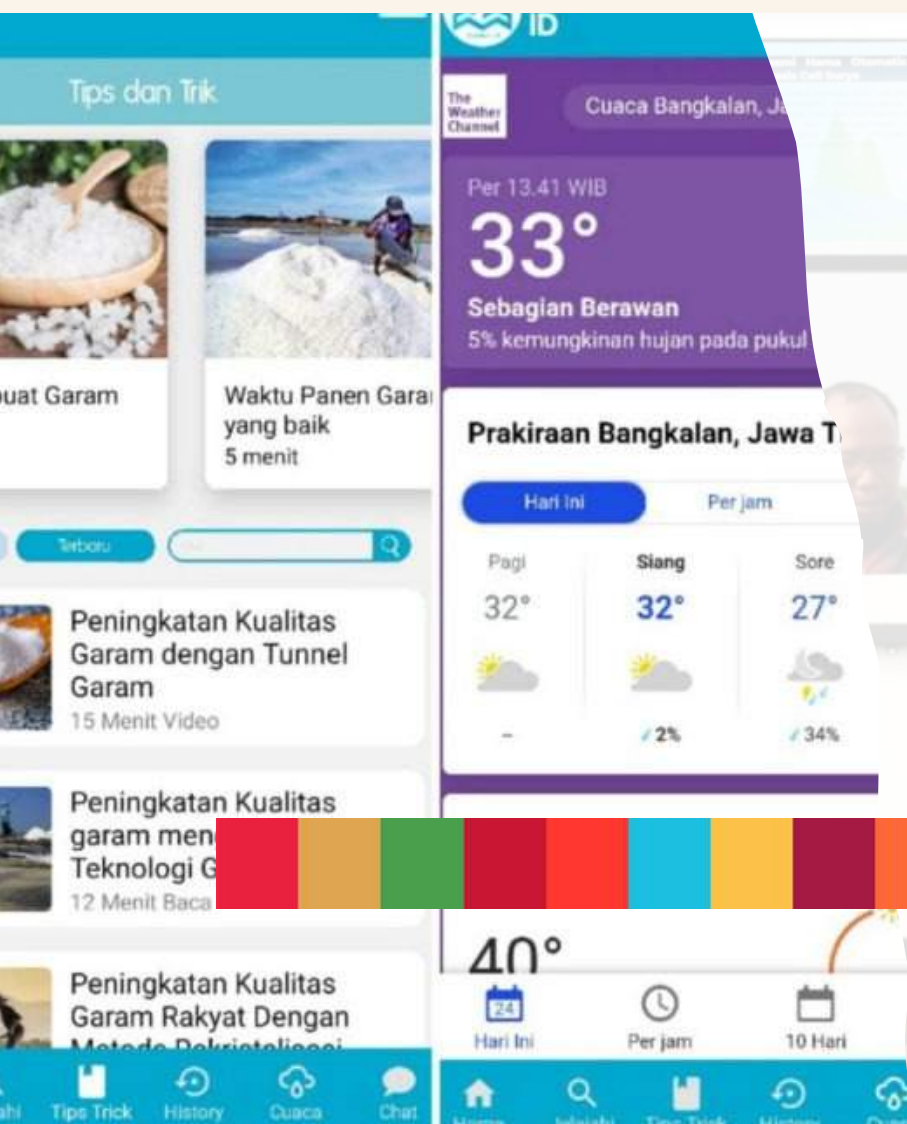


ACCES TO FOOD SECURITY KNOWLEDGE ITS Community Service Programs

Helping others is one of the most important traits of the ITS community, especially towards the locals. As an effort to assist the locals, several community service programs have been conducted. One of these community services was carried out in Petung Village, Gresik, where Must and his team tried to find practical solutions for farmers who still have to peel corn manually. Therefore, the Automatic Corn Sheller was created. This machine can crush corn of different sizes, large and medium, to produce even, neat, and undamaged corn kernels. According to Must, ease of operation is one of the goals, so that anyone can use this tool.



NATIONAL HUNGER ITS Supports Local Farmers



Another way ITS helps solve hunger is by supporting local farmers. This can be seen through the socialization efforts of three ITS students who are members of the Sehat Team and have produced innovative work. Through Garam.id, a salt buying and selling application, domestic salt production can be perfectly absorbed, and education can be provided to salt farmers to help them produce salt according to industrial quality standards. With this application, it is hoped that salt farmers in Indonesia can collaborate with the government and the production industry.

3 GOOD HEALTH AND WELL-BEING



3

GOOD HEALTH AND WELL-BEING



Ensuring healthy lives and promoting well-being at all ages is essential to sustainable development. There is an urgent need to fully eradicate a wide range of diseases and address many different persistent and emerging health issues. We are exploring how universities deal with specific conditions and diseases, and support their community.”

(THE Impact Rankings)

4,301

Number of graduates

0

Number of graduates in health professions



9

3 GOOD HEALTH AND WELL-BEING



COLLABORATIONS AND HEALTH SERVICES

Preventing the Spread of Covid-19, ITS Submits CoFilm+ Antivirus Coating to RSUD

To support efforts to prevent wider spread of omicron virus, the Sepuluh Nopember Institute of Technology (ITS) officially handed over the innovative CoFilm+ coating paint and antivirus sticker products to the Airlangga University Hospital (RSUA). The results of the CoFilm+ coating are carried out by covering parts that have the potential to become a place for transmission of viruses and bacteria such as bed railings, safety grabs, water faucets, door handles, chair handles, tables, and others. A total of 40 rooms and more than 952 items in RSUD have been protected such as the emergency room, ICU, inpatient room, lobby, poly room, and health worker room. The SARS COV-2 virus on the surface of CoFilm+ 90 percent can die on the surface of objects given this coating paint within 10 minutes. Meanwhile, 99.9 percent of the virus can die within 1 hour.



COLLABORATIONS AND HEALTH SERVICES

PPKS ITS Task Force as a Proof of Commitment to Eradicate Sexual Violence

Tidak ada satu pun alasan yang bisa dijadikan pembenaran atas segala bentuk kekerasan, termasuk perundungan. Semua kekerasan akan berdampak negatif, bahkan dampak tersebut membekas dalam jangka yang panjang. Yuk, #BersamaAtasiPerundungan



Lapor jika melihat atau mengalami kekerasan di satuan pendidikan

kemdikbud.lapor.go.id

The Sepuluh Nopember Institute of Technology (ITS) has officially inaugurated 21 members of the Task Force (Satgas) for Prevention and Handling of Sexual Violence (PPKS). This is ITS's commitment in creating a campus that is safe from sexual violence. PPKS serves by providing counselling and handling case reports. With a competent team including psychologists ready to assist as well as comprehensive debriefing from the National Commission on Violence against Women, ITS academics are expected to have the courage to report cases of sexual violence that may be encountered or experienced.

#MerdekaBeragamSetara

4 QUALITY EDUCATION



4 QUALITY EDUCATION



“A high-quality education should be an area where universities excel. Education is a key gateway out of inequalities, especially multi-generational ones. In addition to improving quality of life, access to inclusive education can help equip locals with the tools required to develop innovative solutions to the world’s greatest problems.”

(THE Impact Rankings)

4,301

Number of graduates

0

Number of graduates who gained a qualification that entitled them to teach at primary school level

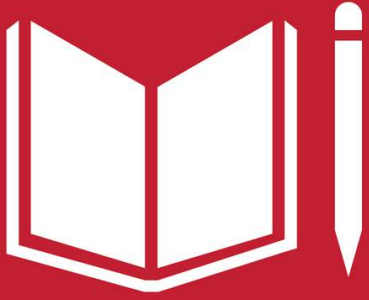
5,848

Number of students starting a degree

3,774

Number of first-generation students starting a degree





LIFELONG LEARNING MEASURES

ITS Supports Lifelong Learning

Not only does ITS Surabaya consider education within campus, but it also conducts educational outreach activities beyond its campus. One of these programs is the Field Study and Community Service (KKN), which is led by one of our lecturers, Edwin Riksakomara, SKom MT. In this program, ITS students teach programming to 6th grade students at Madrasah Ibtidaiyah (MI) Nasyrul Ulum 1 Grobogan in Jawa Tengah. Programming is one of the tools for digital literacy, enabling students to develop systematic thinking abilities.



LIFELONG LEARNING MEASURES

Education outreach activities beyond campus



Institut Teknologi Sepuluh Nopember (ITS), through KKN Community Services (KKN Abmas), continues to share positive initiatives that can benefit their surroundings. One of these initiatives is providing information technology training to teachers to enhance the quality of their teaching process, facilitated by the Programming Laboratory of ITS Informatics Engineering Department. The target audience for this training is SD Sutorejo 1/240 Surabaya, with the aim of improving the quality of elementary school education through PowerPoint training. It is hoped that this training will benefit teachers in creating interesting and interactive learning materials, which will ultimately increase students' interest in learning.

5 GENDER
EQUALITY



5

GENDER EQUALITY



“Women and girls continue to suffer discrimination and violence in every part of the world. Gender equality is a fundamental human right, and a foundation for a peaceful, prosperous and sustainable world. Providing women and girls with equal access to education is a key part of delivering gender equality, but universities also have a wider role to drive forward gender equality in their communities.”

(THE Impact Rankings)

2,444

Number of women starting a degree

566

Number of senior academic staff

1,652

Number of first-generation women starting a degree

166

Number of female senior academic staff

4,301

Number of graduates by subject area (STEM, Medicine, Arts & Humanities / Social Sciences): Total

1,789

Number of female graduates by subject area (STEM, Medicine, Arts & Humanities / Social Sciences): Total

3,454

Number of graduates: STEM

1,374

Number of female graduates: STEM

0

Number of graduates: Medicine

0

Number of female graduates: Medicine

847

Number of graduates: Arts & Humanities / Social Sciences

415

Number of female graduates: Arts & Humanities / Social Sciences

4,301

Number of graduates: Total





STUDENT ACCESS MEASURES

ITS Supports Gender Equality

The Sepuluh Nopember Institute of Technology (ITS) is actively addressing gender inequality and promoting the development of women's contributions within the institutional realm. One of the ways in which ITS is providing support to eliminate gender gaps is through self-development and organizational assistance, which has been strategically planned by the DSDMO. This support is evident in the appointment of Sri Fatmawati SSi MSc PhD as the leader of the Indonesian Young Scientists Academy (ALMI) for the 2020-2022 period at the national level. Furthermore, in collaboration with ITS, she has successfully initiated the Indonesia National Chapter of the Organization for Women in Science in the Developing World (OWSD), a women's scientific organization with an extraordinary vision for advancing science in Indonesia.



WOMEN'S PROGRESS MEASURES

ITS Againts Gender Discrimination

In ITS, gender discrimination is not tolerable, especially toward women. Such action is controlled through several regulations, such as the ITS Statue No. 54/2017 Paragraph 2, AITS article 18 on Student Enrollment and ITS' 2017 Rector Regulation No. 2, Chapter 4, Part 2, Clause 8 on Admission. Furthermore, organizations such as GIRL UP ITS are available to give safe space to female students in ITS. This is also shown through the number of female graduates, which has been recorded since 2015.



6 CLEAN WATER AND SANITATION



6 CLEAN WATER AND SANITATION



Without water we can't live. Water supports out agriculture and aquaculture. Clean water is vital. However, due to bad economics or poor infrastructure, millions of people including children die every year from diseases associated with inadequate water supply, sanitation and hygiene."

(THE Impact Rankings)

**382,116 m³/
382,106 m³**

Volume of water used in the university : Inbound (treated/extracted water)

22,942

Campus population



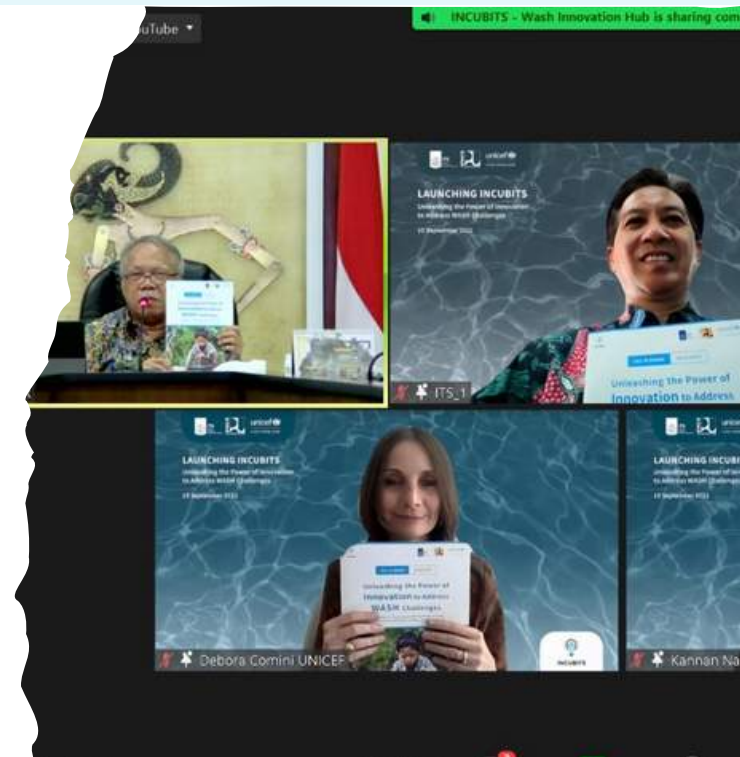
6 CLEAN WATER AND SANITATION



WATER CONSUMPTION PER PERSON

ITS Supports Clean and Renewable Energy

Institut Teknologi Sepuluh Nopember (ITS) yet again started its newest innovative program to help the community. One of ITS innovation is Incubits. Incubits is a platform focused on WASH (Water, Sanitation, and Hygiene) by gathering and connecting startups in Indonesia. The Minister of PUPR highlighted challenges such as urbanization, climate change, and the non-optimal commitment of stakeholders that have resulted in many Indonesians lacking access to clean water and healthy sanitation. Incubits was created to support the government, especially the Ministry of PUPR, to provide access to clean water and healthy sanitation services as sustainable development.



WATER USAGE AND CARE

ITS and Wastewater Treatments

A team called TIRTA 62 consisting of three students from the Sepuluh Nopember Institute of Technology (ITS) has innovated the Self Clean Rainwater Harvesting Wastafel (Steril), a sink that is capable of purifying rainwater into clean water for hand washing. Steril was created based on data that Jakarta is experiencing a clean water deficit while Jakarta's rainfall has increased by 80% from the previous year. Therefore, to meet the need for sanitation with clean water during the COVID-19 pandemic, a sink design was made with a source of water that has been sterilized from rainwater. The TIRTA 62 team hopes that Steril will be further developed and researched so that sterilization efficiency can be increased up to 100 percent and be able to ensure the availability and sustainable management of clean water and sanitation for the community.



6 CLEAN WATER AND SANITATION



WATER REUSE

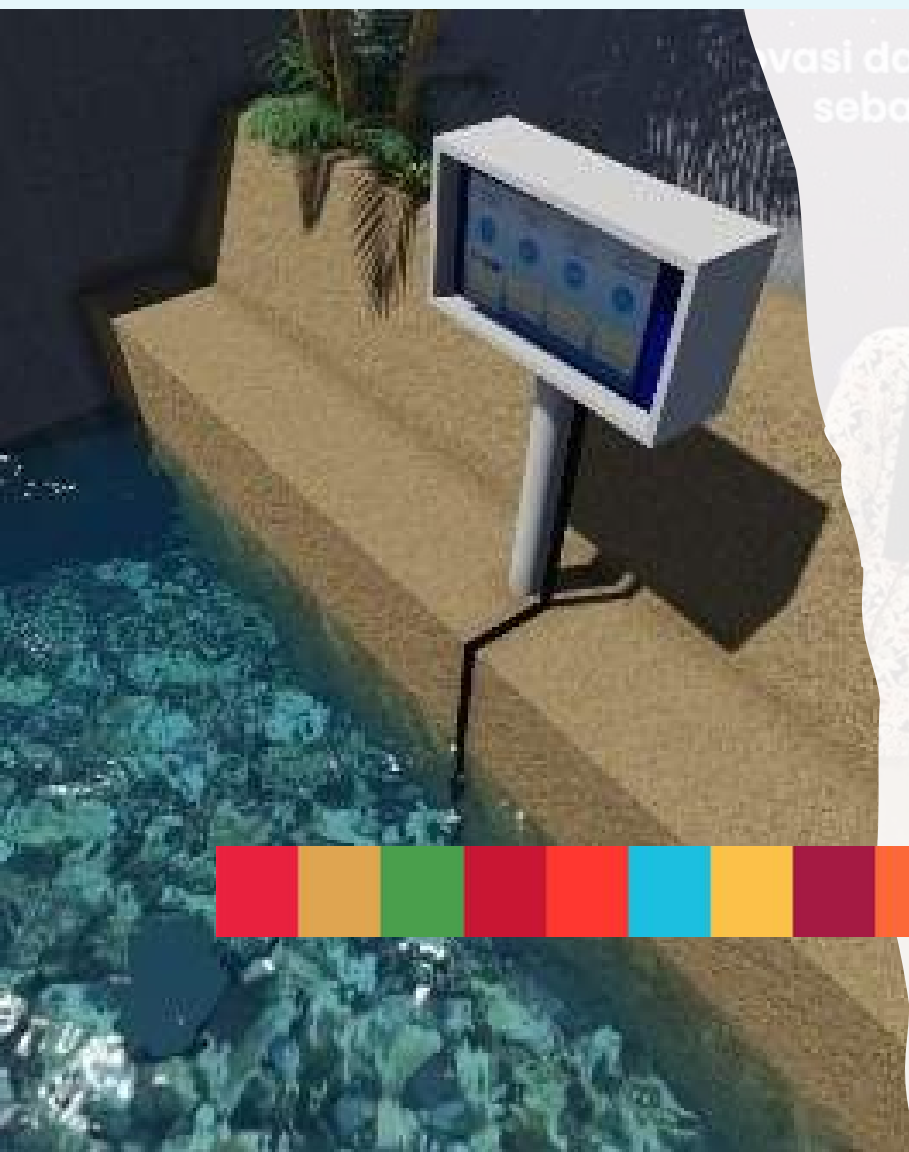
Tracking of Water Usage in ITS

As water is very important, reusing water is one of the ways to reduce unnecessary water usage. In ITS, such a thing is tracked. The usage of dual-flush toilet is implemented in ITS, where two types of toilet flushes are used: the big flush, which uses approximately 6 - 9 liters of water, and the small flush, which uses approximately 3 - 4 liters of water. ITS also installed water sprinklers that use a system where water is used as efficiently as possible while still maximizing the area being watered by sprinkling the water with pressure.



WATER IN THE COMMUNITY

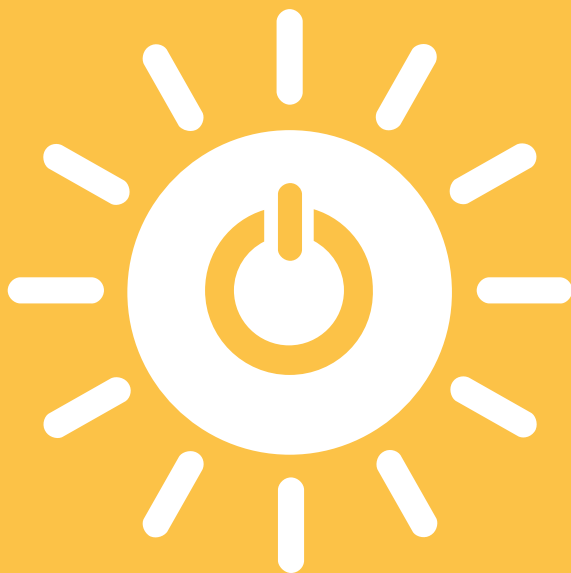
ITS & Off-campus Water Conservation Support



...vasi dalam Infrastruktur dan Teknologi Sumbu...r Daya Air
...sebagai Upaya Konservasi Daerah Aliran Sungai

The CT-Reese Garvi team has innovated a water quality monitoring system for the Brantas River based on the Internet of Things (IoT). This innovation was sparked by concerns over the current condition of the Brantas River, which is filled with trash from local community activities. The monitoring results can be accessed through an application by river management parties such as Jasa Tirta. Meanwhile, the community can also see real-time water quality monitoring results through a screen provided at the location where the sensors are placed.

7 AFFORDABLE AND CLEAN ENERGY



7 AFFORDABLE AND CLEAN ENERGY



“After water and food, energy is one of the key enablers of human life. Energy is central to nearly every major challenge and opportunity the world faces today and access to energy for all is essential. But energy needs to be available and affordable to all to allow future development, and it needs to be clean in order to ensure that the development can be sustainable.”

(THE Impact Rankings)

40,863.62 GJ/
42,513.91 GJ

Total energy used

528,225 m²

University floor space



7 AFFORDABLE AND CLEAN ENERGY

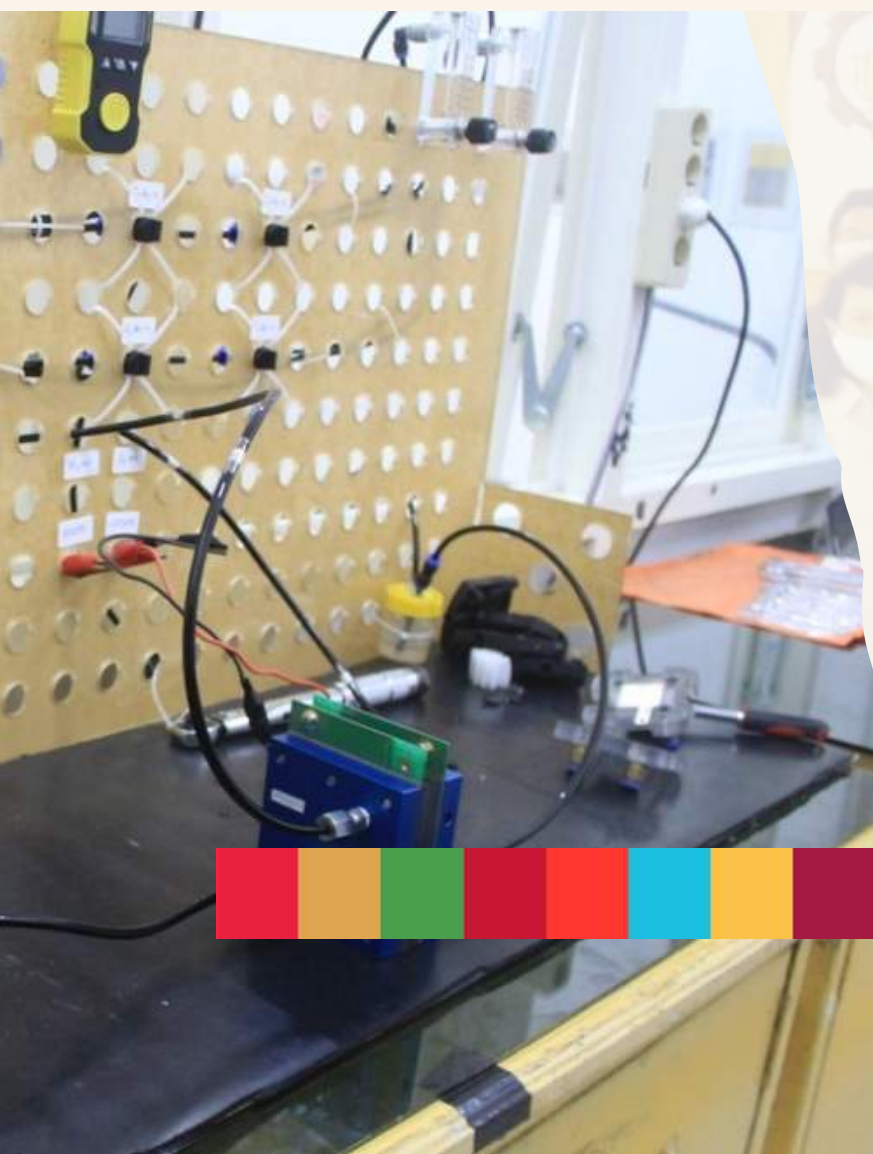


CARBON REDUCTION AND EMISSION REDUCTION PROGRESS ITS Student's Innovation for Synthetic Fuel

The use of petroleum and natural gas in the global energy mix still contributes the largest share at 54.2 percent. In order to replace these high carbon-emitting conventional fuels, three ITS students who are members of the Synchronize team have developed synthetic fuel using digital twin technology. With the help of digital twin technology, the optimal composition of the blend between conventional fuel and synthetic fuel for a particular vehicle engine can be determined. If synthetic fuel is applied to all vehicles, especially passenger vehicles, it has the potential to reduce carbon emissions by 4.6 metric tons per year.



ENERGY EFFICIENCY SERVICES FOR INDUSTRY ITS Together with BUMN to Develop Fuel Cell as Renewable Energy



The New Renewable Energy (NRE) serves as an alternative to replace the predominant use of fossil fuels in the present day. To this end, ITS is collaborating with PT INKA and PT Pertamina to develop Fuel Cell technology, which can be implemented in train cars throughout Indonesia. A Fuel Cell is an electrochemical device that generates electricity by utilizing hydrogen fuel and produces emissions in the form of water. As a result, this technology is considered to be more eco-friendly and has the potential to become a primary source of energy in the future. According to Agung, the research being conducted is expected to lead to downstream products in the future. Agung expresses the hope that ITS will continue to pursue the development of hydrogen technology, which has significant potential.

8 DECENT WORK AND ECONOMIC GROWTH



8

DECENT WORK AND ECONOMIC GROWTH



“Decent work in safe and stable conditions is a vital component of helping people out of poverty, with the related aspects of reducing hunger and increasing health. The rise of precarious employment, modern slavery, and uneven growth has created threats to a sustainable future. Universities as employers can lead the way, as teachers can educate for the future, and as innovators can develop new and fairer ways of working.”

(THE Impact Rankings)

3,045

Number of employees

3,045

Number of employees on contracts of over 24 months

507

Number of students with work placements for more than a month

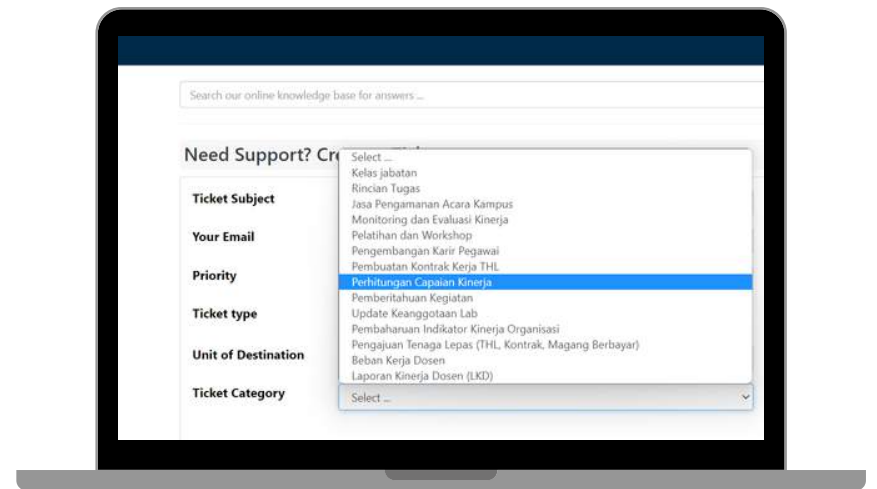




EMPLOYMENT PRACTICE

Employment Practice Appeal Process at ITS

ITS have a process for employees to appeal for employee rights and / or pay to all its workers. Through ITS' Service Desk system which can be accessed at <https://servicedesk.its.ac.id/> ITS' employees can submit an appeal in regard to their rights and/or pay to Directorate of Human Resources and Organizations (DSDMO) ITS in the category of "Perhitungan Capaian Kinerja" or Performance Targets' Assessment.



REGULATION/POLICY

Related Regulations to Employment Practice Living Wage and Pay Scale Equity

In response to the inadequate income for many working households dependent on the current statutory minimum wage rates, ITS is committed to implementing employment practice living wage measures, and pay scale equity with elimination of gender pay gaps. ITS has established a number of regulations to ensure these measures to all staffs and faculty members through the Regulations of ITS Rector released from 2017 to 2021. These regulations manage salary and additional income for ITS Employees.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



“Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries.”

(THE Impact Rankings)

25

Number of university spin-offs

1450

Number of academic staff by subject area: STEM

304

Number of academic staff by subject area: Arts & Humanities





ITS' INNOVATION

ITS Invents a eBicare Cough Analyzer

Researchers from ITS have invented a COVID-19 detection device through the sound of coughing, named eBicare Cough Analyzer. With a thin and small sensor microphone that can capture surrounding sounds, the device has a processor which can analyze a cough and determine whether the person has been infected with COVID-19. If the cough is not detected as a COVID-19 patient, the cause of the cough can be traced further. The grouping of these categories is based on the adjustment of the frequency, amplitude, and harmonic components of the user's lung sound. Aligned with ITS motto "Advancing Humanity", Dr. Dhany hopes that the device will help to provide proper health facilities at a low cost for people.



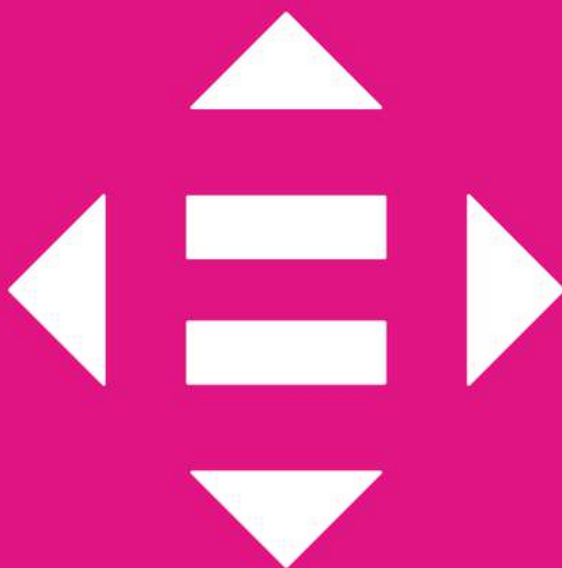
ITS' INNOVATION

ITS Launches Ocean FarmITS

In developing sustainable investment in infrastructure and innovation, ITS contributes in launching the first marine ecotourism dual aquaculture offshore building in Indonesia, Ocean FarmITS, which can be a place for fish cultivation as well as a place for marine tourism. In addition, Ocean FarmITS is also able to solve the problems of fishermen on the south coast who have difficulty getting fish when the weather is bad and help exploit the potential of the sea in Indonesia through a touch of technology.



10 REDUCED INEQUALITIES



10 REDUCED INEQUALITIES



“Equality needs to underpin every aspect of sustainability if the objectives of the SDGs are to be met. Although SDG 5 Explores this through the prism of gender, SDG 10 takes a broader look at intersectionality of disadvantages.

This disadvantages can be felt through all of the other key issues raised by the SDGs - Disadvantaged groups are both more likely to be unable to take advantage of progress and to suffer from the effects of climate change.”

(THE Impact Rankings)

5,848

Number of students starting a degree

3,774

Number of first-generation students starting a degree

884

Number of international students from developing countries

2

Number of employees with disability

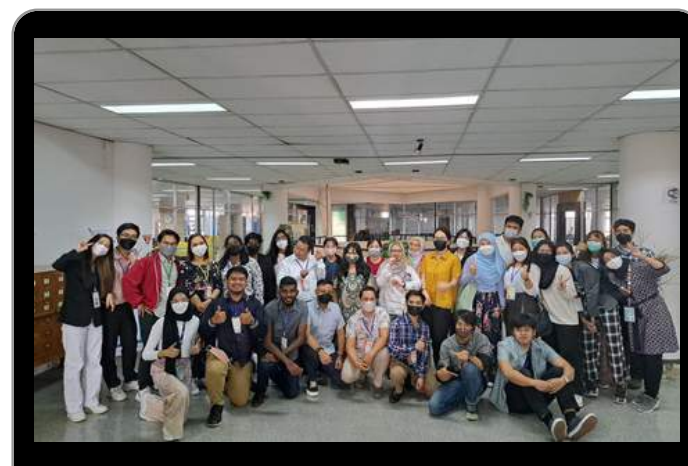




MEASURES AGAINST DISCRIMINATION

ITS Put Effort on Enhancing Diversity

Global exposure is an efficient way to discover cultural diversity. ITS Global Engagement, as the frontliner of internationalization activities organizer of ITS, held a Community and Technological Camp, or CommTECH Camp as an opportunity for students, academics, and professionals from around the world to learn about the community and global issues through a variety of fun activities but have in-depth learning. Held on Winter to Summer 2022, this program welcome participants form overseas university such as UNIMAP, NCU, SUT, TAU, and many other more.



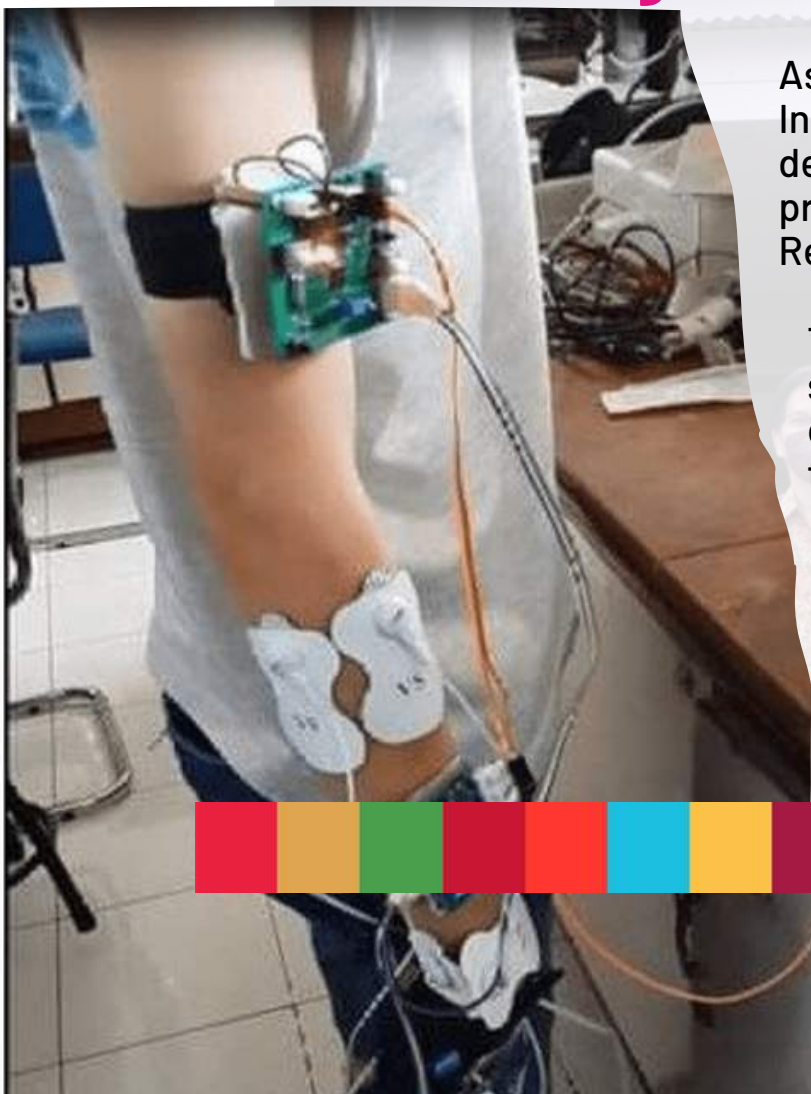
MEASURES AGAINST DISCRIMINATION

ITS Held Rehabilitation Support through Engineering and Assistive Technology

As an institution engaged in technology, the Sepuluh Nopember Institute of Technology (ITS) has also contributed to the development of medical rehabilitation technology in the country, presented in a Study Assistive Technology and Medical Rehabilitation course at ITS Biomedical Engineering.

The Assistive Technology and Medical Rehabilitation specialization is a combination of basic knowledge in the world of medicine and robotics which aims to restore the condition of the human body with disabilities to normal conditions.

In the rehabilitation phase, especially the patient's motoric rehabilitation, with the help of functional electrical stimulation (FES) and robotic exoskeleton devices.



11 SUSTAINABLE CITIES AND COMMUNITIES



Institut Teknologi Sepuluh Nopember (ITS)



2022

11 SUSTAINABLE CITIES AND COMMUNITIES



“Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries.”

(THE Impact Rankings)

Rp1,106,971,054,942

University expenditure

Rp206,065,926,477

University expenditure on arts and heritage





SUSTAINABLE PRACTICES

Affordable Housing For Employees

Not only providing facilities for its students, the Sepuluh Nopember Institute of Technology (ITS) also builds accommodations for its educators or lecturers. ITS is committed to providing assistance to young ITS lecturers who have just completed their studies because the purchasing power of the younger generation to buy homes is still low. There are two flats built, namely the flats in N-11 Block and F Block.



SUSTAINABLE PRACTICES

Bike at ITS

To create a smart eco campus, ITS promotes sustainable practices. The practices include measuring and setting targets for more sustainable commuting (walking, cycling or other non-motorized transport, carpools, shuttlebus or public transportation, motorcycle, and electric vehicles). The initiatives are supported by the Circular Letter of ITS Rector No. T-95007-IT2-TU.00.08-2019 about ITS' Initiatives towards a Sustainable and Environmental Friendly Campus, specifically item C, no. 1-7. ITS builds pedestrian ways and bike lines and offer bike rent services to promotes non-motorized vehicles. The bikes are rented for free for the campus community.



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



“Much of the world’s economy is based around producing things for consumption. This drives the engine of industry. If we want the world to develop sustainably, we need to understand how to be more responsible at both ends of this cycle. This means promoting resource and energy efficiency, having a sustainable infrastructure, and providing access to basic services for all.”

(THE Impact Rankings)

728 metric ton

Amount of waste generated

104 metric ton

Amount of waste recycled

520 metric ton

Amount of waste sent to landfill





OPERATIONAL MEASURES

ITS as a Sustainable Food Sourcing Friendly Campus

Various efforts have been made by ITS to implement operational measures policies on various aspects. As a coastal located campus, ITS has a special anticipation to ensure sustainable food harvesting from the aquatic ecosystem area.

For this issue, ITS students work with the local community to provide assistance in the project called "Rumah Pesisir". It is an innovation for marine catches to guarantee increase in the selling price of fishermen's catches. ITS also works in the research and innovation area for the fisheries community, one of the innovation is through Eco Storage Portable (ES-PORT), a thermoelectric fish storage.

This project also intend to help empowering the young fishermen of Desa Tambak Cemandi, Sidoarjo.



PROPORTION OF RECYLED WASTE

ITS Launches Integrated Waste Savings

Coinciding with the commemoration of Earth Day, the ITS Smart Eco Campus, together with the Environmental Lovers and Observers Group (KPPL) of Institut Teknologi Sepuluh Nopember (ITS), launched the ITS Integrated Waste Savings (TaSTe). The entire ITS big family can use the ITS TaSTe to foster a culture of managing waste properly.

ITS academics who want to save waste can bring their sorted waste to the ITS Urban Farming location. After that, the officer will weigh the sorted waste. Garbage depositors will be directed to create an account at the taste.its.ac.id to collect data on the exchange of waste with points. And later, people can exchange points from saving trash in money or vouchers,

Aside from TaSTe, ITS also invented eco-brick, biogas reactor, special exhaust pipe, E-waste, urban farming composter are also created to support the waste disposal and process.



13 CLIMATE ACTION



13 CLIMATE ACTION



“Climate change is a crisis that will affect every part of society, and every country. Universities need to be at the forefront of action to reduce the impact of climate change, especially amongst the poorest who will be the most affected.”

(THE Impact Rankings)

40,863.62 GJ/ 42,513.91 GJ

Total energy used

779.78 GJ

Total energy used from low-carbon sources





ENVIRONMENTAL EDUCATION MEASURES ITS LAUNCHES ALTER

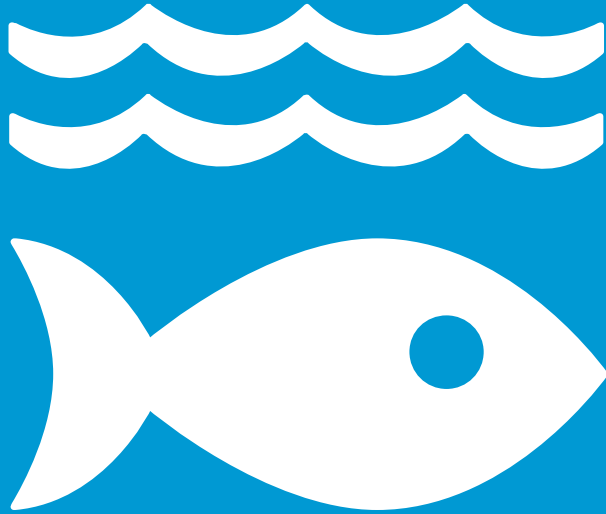
ALTER is an acronym for Save, Clean and Maintained Water; Managed waste and garbage; Environmentally friendly transportation and infrastructure; Energy-saving, efficient and sustainable; Green open space, research and education with an environmental perspective. ITS has carried out several programs to realize this goal, including rain water harvesting, provision of free campus bicycles for the ITS academic community, green land cover or vegetation of around 664,054 square meters or 42 percent, and ITS has an ITS Integrated Waste Savings program (TasTe) which is run for increase the enthusiasm and concern of the ITS academic community for the waste care.



COMMITMENT TO CARBON NEUTRAL UNIVERSITY DISASTER MITIGATION AND CLIMATE CHANGE

Research Center for Disaster Mitigation and Climate Change (Puslit MKPI) has a focus on offering and deriving ideas in disaster and climate risk reductions through the results of various scientific research into solutions to various disasters and climate change phenomena in Indonesia. This focus is an embodiment of the ITS 2020-2030 vision in the field of research, which is "To play an active role in the development of science and technology, especially in the fields of marine, environment and settlements, energy, as well as information and communication technology that is environmentally conscious through international research activities".

14 LIFE BELOW WATER



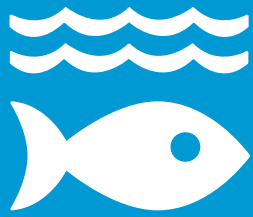
14 LIFE BELOW WATER



“The two SDGs that look at the broader ecosystem divide it into Life Below Water, and Life on Land. The oceans, and the rivers and watersheds that link to them, are the largest part of our ecosystem. 40% of the world’s population lives within 100km of the coast, and we all rely – directly or indirectly – on the sea.”

(THE Impact Rankings)





SUPPORTING AQUATIC ECOSYSTEMS THROUGH ACTION

ITS Launches Ocean FarmITS

Inflaming the spirit of innovation as the leading maritime campus in Indonesia, the Sepuluh Nopember Institute of Technology (ITS) has launched an offshore technology innovation. Through Ocean FarmITS (OFITS), a technology in the form of offshore floating net cages (KJA). KJA already had a bottom building with nets as deep as seven meters for fish cultivation and an upper building in the form of a floating hotel for tourism.

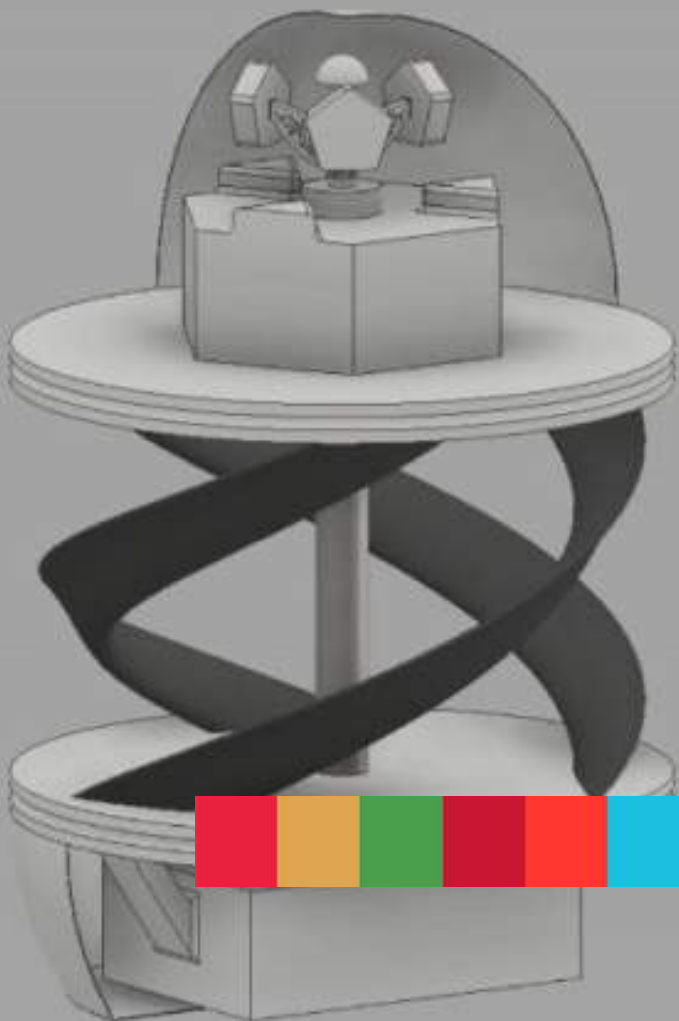
Following the ITS tagline, namely Advancing Humanity this innovation will not only function as a medium for fish cultivation and help local fishermen but will also be intended for marine tourism activities.

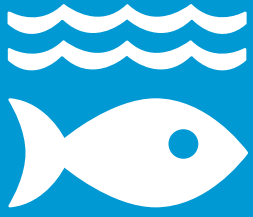


SUPPORTING AQUATIC ECOSYSTEMS THROUGH ACTION

ITS Students Innovate Illegal Fishing Detection Sensors

The innovation came from five students of ITS who made the idea of underwater sensor technology innovation applied to Indonesian marine territory. They initiated an innovation called Humanless Underwater Sensors Technology (HUST). This tool serves to detect the entry of ships without official permission into Indonesian waters or vessels suspected of illegal fishing and can also be used to detect marine disasters such as earthquakes and tsunamis.





WATER SENSITIVE WASTE DISPOSAL

solve the problem of pollution in the sea with bacteria

Utilization of biodegradation to overcome the problem of petroleum pollution that occurs in the sea caused by leaks during oil drilling activities and spills when shipping by ship. Biodegradation in this study utilizes the bacteria *Bacillus subtilis* and *Pseudomonas putida* which aims to determine the level of effectiveness of the bacteria in decomposing high levels of pollutant chemical compounds.



MAINTAINING A LOCAL ECOSYSTEM

ITS Abmas empowers local people to prevent beach abrasion



The worsening abrasion of Tlangoh Beach is disrupting the economy of the surrounding community. Through this problem, Department of Marine Engineering ITS held Community Service (Abmas) to design artificial coral reefs named "Hexareef". The placement of Hexareef in the sea is expected to reduce the rate of abrasion on Tlangoh Beach as well as a medium for coral transplants so as to create a sustainable coastal environment rich in biodiversity.

15 LIFE ON LAND



15 LIFE ON LAND



“This is the second of two SDGs that look at the broader ecosystem – the other being SDG 14: Life Below Water. Life on land is a precious resource – we need to ensure that it is passed on to future generations, at a time when loss of biodiversity is an increasing concern. Different universities will have responsibility for very different landscapes and the life within, but all have a responsibility as stewards of their environment.”

(THE Impact Rankings)





SUPPORTING LAND ECOSYSTEMS THROUGH EDUCATION

Support The Conservation of Biodiversity, ITS Innovates Smart Surveillance

A good monitoring system is one of the most important things in implementing forest conservation. To integrate the monitoring system into the barcode system, KKN Community Services Program (KKN-PM) team from Institut Teknologi Sepuluh Nopember (ITS) initiated digitalization to facilitate regular monitoring systems by forest area managers. To supervise flora species in Sumber Pawon Forest, Kediri, a barcode will be placed in front of the tree or plant to show various information related to the flora such as species name, distribution, rarity status, age, general description, and plant benefits.



SUPPORTING LAND ECOSYSTEMS THROUGH ACTION

Handing over 13 Semeru Endemic Orchids, TNBTS Supports ITS Smart Eco Campus

The Smart Eco Campus which has been declared since 2011 by the Institut Teknologi Sepuluh Nopember (ITS) continues to be empowered and plays an active role in the development of environmentally sound science and technology. Supporting this as well as conservation on the ITS campus, Bromo Tengger Semeru National Park (TNBTS) handed over 13 types of Semeru orchids in the yard of the ITS Rectorate Building, Wednesday, 13 April 2022.





LAND SENSITIVE WASTE DISPOSAL

Circular Letter of ITS Rector No. 50268 Year 2019 about the Use of Disposable Plastic Bottled Water and Plastic Bags in the ITS Environment

One of ITS' efforts in increasing the awareness of the academic community about land-sensitive waste disposal is having a policy regulating single-use plastic drinking water packaging. By encouraging procurement of dispenser, organic food packaging, and non-plastic banners, ITS undertake Smart Eco Campus programs more intensively.



LAND SENSITIVE WASTE DISPOSAL

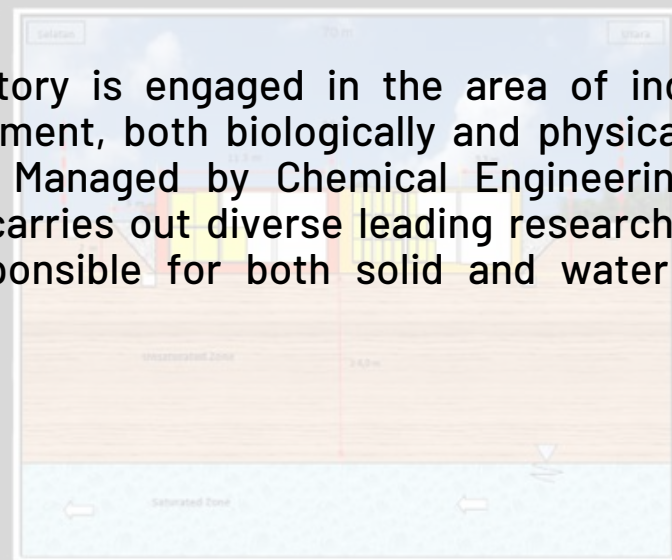
Industrial and Biomass Waste Treatment Laboratory



Indonesia

Design of Demonstration Disposal

This laboratory is engaged in the area of industrial waste treatment, both biologically and physically and chemically. Managed by Chemical Engineering, this laboratory carries out diverse leading research topics and is responsible for both solid and water waste treatment.



Disposal :
Near Surface Disposal

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



“SDG 16 and 17 explore some of the underlying factors that are needed in order to ensure delivery of the other SDGs. Peace and Justice go hand in hand – and indeed are vital for equity between people and countries. Supporting this we need our institutions to be strong enough to maintain a focus on delivering the SDGs. This can range from individual justice – eradicating modern slavery and people trafficking – to ensuring that our countries have the evidence base needed to react appropriately to crises.”

(THE Impact Rankings)

4301

Number of graduates

0

Number of graduates from law and enforcement related courses





UNIVERSITY GOVERNANCE MEASURES

ITS Student Representatives

ITS has student representatives to voice the aspirations of ITS students in the campus system. Consists of the Student Executive Board which help students to convey problems or ideas to the campus to be a better campus. In addition, the ITS BEM is also tasked with coordinating all student organization activities within the KM ITS scope and student activities in the socio-political field.



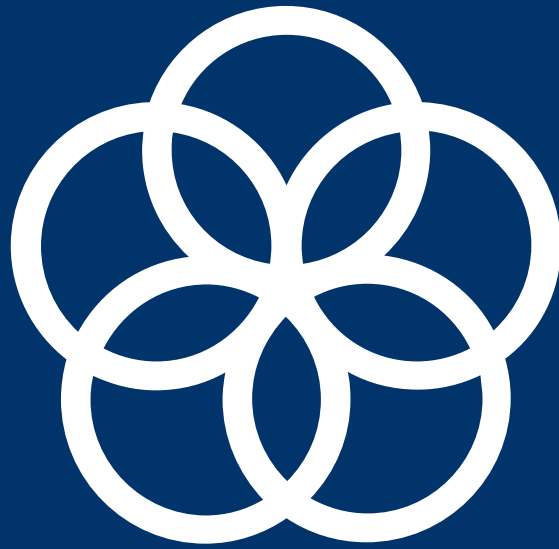
WORKING WITH GOVERNMENT

ITS Contributions for The Transortations in G20

The Ministry of Education, Culture, Research and Technology (Kemdikbudristek) in Indonesia has collaborated with PT Industri Kereta Api (INKA) to develop 30 units of the Red and White Electric Bus for the 2022 G20 Summit. The collaboration involves a consortium of four universities, with the Institut Teknologi Sepuluh Nopember (ITS) acting as the leading institution. Seven ITS lecturers and student interns from various universities were involved in the development of the bus. The bus design has an estimated Domestic Component Level (TKDN) of 75%, demonstrating the strong support for research and development controlled by the Indonesian people.



17 PARTNERSHIPS FOR THE GOALS



17 PARTNERSHIPS FOR THE GOALS



“Investments in infrastructure – transport, irrigation, energy and information and communication technology – are crucial to achieving sustainable development and empowering communities in many countries.”

(THE Impact Rankings)





RELATIONSHIP TO SUPPORT THE GOALS

ITS Collaboration with Worldwide Stakeholders

The Sepuluh November Institute of Technology (ITS) collaborated with Heriot Watt University and the City Government of Kediri to find solutions for good waste management in medium-sized cities. They discussed the solution discourse in the Launch Event of Building a Local Sustainable Supply Chain Network for Recyclable Materials. Solid waste management is crucial for medium-sized cities, and immediate action and innovative solutions are needed. ITS hopes to develop the field of intelligent environment in 2023 and collaboration from various parties, especially the government, is needed to solve industrial and environmental problems



EDUCATION FOR THE SDGS

Sustainable Development Goals Center



As one of the most outstanding universities in Indonesia, ITS is committed to creating a meaningful education around the Sustainable Development Goals (SDGs) across the university. ITS has established an SDGs Center to create incredible programs to promote and implement goals; one of the programs is the greatest known Guest Lecture Series that invites outstanding speakers worldwide. In addition, to increase the ITS students' knowledge of technology and scientific communication, ITS created a Wawasan Teknologi and Komunikasi course.

