

9

INDUSTRY, INNOVATION AND INFRASTRUCTURE

SUSTAINABLE INDUSTRY, INNOVATION, AND INFRASTRUCTURE FOR A BETTER FUTURE

Industry, Innovation and Infrastructure to develop sustainable economic infrastructure, promote industry in all aspects, and create innovations

9

INDUSTRY, INNOVATION AND INFRASTRUCTURE

Policy and Commitment to SDG 9: Industry, Innovation, and Infrastructure Sakon Nakhon Rajabhat University, Fiscal Year 2025

Sakon Nakhon Rajabhat University (SNRU) is a university for local development and advances SDG 9, Industry, Innovation, and Infrastructure, under the idea of "innovation from local resources to community industry." The university turns research into inventions and appropriate technologies that small producers, community enterprises, and regional entrepreneurs can actually use. This work has won national recognition. In FY2025, SNRU researchers received two National Research Awards for inventions from the National Research Council of Thailand (NRCT): a Very Good award for "Creating Indigo-Dyed Fabric Patterns Using the Wax-Resist Technique" and a Good award for "Promoting and Upgrading Sakon Nakhon Beef Cattle through Innovation and Technology." The "Ready-to-Dye Indigo Powder" innovation also won a Good-level award for appropriate innovation and technology at the "Community Innovators: Appropriate Technology Driving Thailand's Community Economy" event on 1-2 July 2025. In addition, SNRU showcased "Safe Step," a health-technology innovation for preventing falls among older people, at Thailand Research Expo 2025 on 16-20 June 2025. SNRU helps community producers move up to standardized, industrial-level production. In FY2025, the Faculty of Agricultural Technology used provincial funding to develop processed-product prototypes for 18 farmer groups. It also ran the Sustainable Community Product Standards and Online Platform Project, which helps OTOP products meet the Thai Community Product Standard, GMP, and Thai FDA requirements and reach online markets. The university also developed a "mobile aquatic breeding kit" so that farmers can breed commercial fish species locally. Meanwhile, the SNRU Technology Clinic Network called for FY2025 technology-transfer proposals under three platforms (Network Capacity Building, Building Community Enterprise, and Science Community Incubator), covering the organic agriculture, Isan weaving, and livestock value chains. To develop new innovators and plan regional infrastructure, the Research and Development Institute held the Innovation for Sustainable Local Development Award (ISDA2025) on 6 August 2025 for secondary and university students, with energy, materials, and biochemistry as categories. On 26 February 2025, SNRU also hosted the Area Need 3 workshop with the SDG Move Center and Chulalongkorn University's Social Research Institute to develop a Provincial SDG Index. The analysis identified infrastructure (SDG 9) as one of the Northeast's high-risk challenges, helping the university and local agencies plan development that matches the region's real needs.

Key Activities & Projects : Promoting Innovation at the University

Sakon Nakhon Rajabhat University (SNRU) has an Intellectual Property Management, Technology Transfer and Innovation Unit (Technology Licensing Office, TLO-SNRU) under its Research and Development Institute. The unit supports researchers along the whole innovation path, from advice on registering intellectual property (invention patents, design patents, petty patents and copyrights) to transferring technology to commercial users. SNRU currently holds 3 invention patents, 2 design patents, 22 petty patents, 66 copyrights and 1 trademark, with a further 154 applications in progress.

In 2025, SNRU continued to build researchers' intellectual property skills:

- Workshop on "Patent and Petty Patent Filing Techniques": Two online sessions were held on 13 May 2025 (inventions and technology) and 23 May 2025 (food, products, and scientific formulas). The speaker was Ms. Jiraporn Luangpairin, Director of the Intellectual Property Center at Khon Kaen University. The sessions covered IP principles, application drafting, document preparation, case studies, and one-to-one advice on participants' work.
- Developing IP management staff: From 26 to 28 March 2025, Dr. Kunchit Singsook, Deputy Director of the Research and Development Institute, attended an intermediate course under the Project to Develop Personnel and Networks for IP Management in Thai Higher Education Institutions, run by Khon Kaen University with the Office of the Permanent Secretary, Ministry of Higher Education, Science, Research and Innovation.





Key Activities & Projects : Promoting Innovation at the University

TLO-SNRU also publishes works that are ready for technology transfer and licensing. In July and August 2025, it listed 10 works, including:



- A mobile paddy dryer using hybrid heat (Patent No. 23105), by Asst. Prof. Dr. Kittiwat Jeebkaew and team. It combines LPG and electric-coil heating, turns its drum with a solar-powered brushless DC motor, and is controlled by a PLC.
- The “Ram Ploen Doen Bo Lom” AR application and the SMART SFE Card exercise guide, developed from the university’s fall-prevention innovation for older people.
- The “Ngon Lam” AR application, a digital medium promoting local cuisine.
- Local ikat and textile patterns, such as “Ton Dok Khao”, “Cho Dok Wa”, “Uthumphon” and “Dong I Doi”.

Key Activities & Projects : Innovation Exhibitions and Dissemination

Sakon Nakhon Rajabhat University (SNRU) regularly takes its research and innovations to national forums to connect them with users, industry and research networks. Key events in 2025 were:

1. **Thailand Research Expo 2025**

- Held 16-20 June 2025 at Centara Grand and Bangkok Convention Center, CentralWorld, Bangkok, organized by the National Research Council of Thailand (NRCT) under the theme “Research for All: Connecting Thailand’s Future through Research and Innovation." SNRU exhibited “Safe Step: Health-Tech in Fall Prevention for the Older” by Asst. Prof. Dr. Neeranuch Worathaisong and team. It combines the “Ram Ploen Doen Bo Lom” dance-based exercise, a self-screening kit with the Smart SFE Card, and sensor-based monitoring of fall risk in the community.





Key Activities & Projects : Innovation Exhibitions and Dissemination

2. **"Community Innovators: Appropriate Technology Driving Thailand's Community Economy" conference and exhibition**

Held 1-2 July 2025 at Centara Grand at Central Plaza Ladprao, Bangkok. The "Ready-to-Dye Indigo Powder" innovation by Asst. Prof. Dr. Thanakorn Rachpila, from the Creative Natural Indigo Tie-Dye Wisdom Innovation Community project, won a good-level award for appropriate innovation and technology.



3. **The 8th Rajabhat University National and International Research and Academic Conference (RUNIRAC VIII).**

Held 1-3 December 2025 at Pibulsongkram Rajabhat University, Phitsanulok. SNRU researchers presented four works:

- improving power output and stability of thermoelectric modules
- integrated engagement innovation for strengthening the grassroots economy
- upgrading dried-product occupational groups through innovation for Sakon Nakhon farmers
- satisfaction with local academic skills competitions and education fairs



Key Activities & Projects :

SNRU Trains Staff to Use AI for Higher-Quality Academic Work

On 18 June 2025, Sakon Nakhon Rajabhat University (SNRU) held a hands-on workshop, "Applying AI to Writing Books, Textbooks, and Research Articles for Academic Promotion," in the Dusita Room on the second floor of the Phuphan Place Hotel, Sakon Nakhon. University President Asst. Prof. Chakrit Chanchitpricha opened the workshop, and Vice President Asst. Prof. Dr. Somboon Chaochaikhong gave the opening report. More than 80 executives, lecturers, and staff took part. The speakers were Prof. Dr. Alongkot Thaenomthong of Khon Kaen University and Assoc. Prof. Dr. Prasart Nuangchalerm of Mahasarakham University. Participants learned and practiced using artificial intelligence to support writing books, textbooks, and research articles, from researching and outlining to developing manuscripts, along with guidance on using AI in line with academic ethics. The workshop aimed to help staff use AI to work more efficiently and produce quality academic work faster, support applications for academic positions, and prepare the university's people for change in the digital era.





Key Activities & Projects :

SNRU Research Institute Trains Researchers to Write Winning Grant Proposals

On 27 March 2025, the Research and Development Institute at Sakon Nakhon Rajabhat University (SNRU) held a workshop, “Techniques for Writing Successful Research Proposals," in the Graduate School Conference Room, Building 20. President Asst. Prof. Chakrit Chanchitpricha opened the workshop, and Vice President Asst. Prof. Dr. Kongphop Cha-amat gave the opening report. The speaker was Asst. Prof. Dr.. Prateep Peuchthonglang of the Faculty of Business Administration and Liberal Arts, Rajamangala University of Technology Lanna. Sixty participants attended from SNRU, Mahasarakham University, and the Nakhon Phanom Buddhist College of Mahachulalongkornrajavidyalaya University.




SNRU Workshop Helps Researchers Win External Funding

On 25 July 2025, the Research and Development Institute at Sakon Nakhon Rajabhat University (SNRU) held a workshop on “Developing Research Proposals for External Funding” in the Dusita Room at the Phuphan Place Hotel. Vice President Asst. Prof. Dr. Kongphop Cha-amat opened the workshop.

- Speaker: Prof. Dr.. Peeradet Tongumpai, Chair of the Committee for Reviewing, Monitoring, and Evaluating the 2025 Research Framework on Scaling Up Appropriate Technology to Raise Household Income and the Grassroots Economy, Program Management Unit on Area-Based Development (PMU-A).
- Content: Designing research that meets funders’ priorities, using analytical tools to link problems, translating research into real policy or business use, and creating value that drives community change.
- Participants: About 30 lecturers and staff.





SNRU Trains Researchers to Use AI from Research Data to Publication

On 29 July 2025, the Research and Development Institute at Sakon Nakhon Rajabhat University (SNRU) held a workshop, “From Data to Publication: Using AI to Turn Research Data into Publications," under its project to develop staff capacity in research and academic service for area-based development. The workshop took place in the Soi Suwanna Meeting Room, Building 10. President Asst. Prof. Chakrit Chanchitpricha opened the workshop, and Ms. Orn-anong Khandet, Deputy Director of the Research and Development Institute, gave the opening report.

- Speaker: Assoc. Prof. Dr. Srijamorn Na Wichian of King Mongkut’s University of Technology North Bangkok.
- Content: Research design for funding and publication, and a hands-on workshop on “AI for Research: Tools & Techniques."
- Aim: Help lecturers, researchers, and students use AI to develop their research more effectively and efficiently.





