



Sai no Kuni
Saitama Prefecture



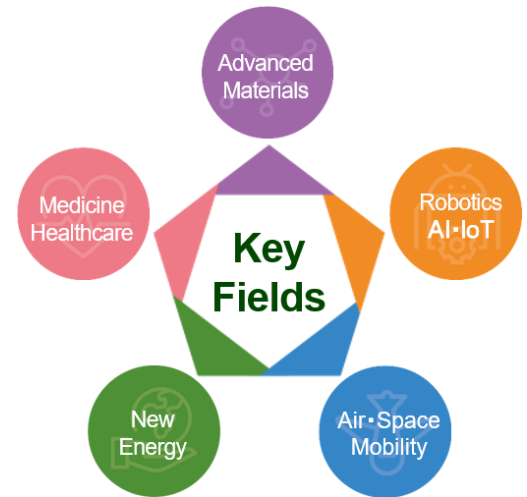
Saitama Prefecture

Powered by Saitama Prefecture

Leading-Edge Industry Design Project

Strengthening the "Earning Power" of Saitama

Saitama Prefecture has been actively promoting the **Leading-Edge Industry Design Project** since 2014. By integrating cutting-edge ideas from academic and research organizations with the advanced technologies of local businesses, Saitama offers consistent support in the practical application of new technologies and commercialization into products, ultimately aiming to create a concentration of Saitama-based leading-edge industries. Intensive support has been provided in five **key fields** with high growth potential, namely, "**Advanced Materials**", "**Medicine • Healthcare**", "**Robotics • AI • IoT**", "**New Energy**" and "**Air • Space • Mobility**". Additionally, in 2020, the Project will support open innovation initiatives that aim at finding solutions to various social issues by utilizing leading-edge technologies.



Structures for Total Support and How They Work

Support programs include:

◆ The Leading-Edge Industry Experts Meeting

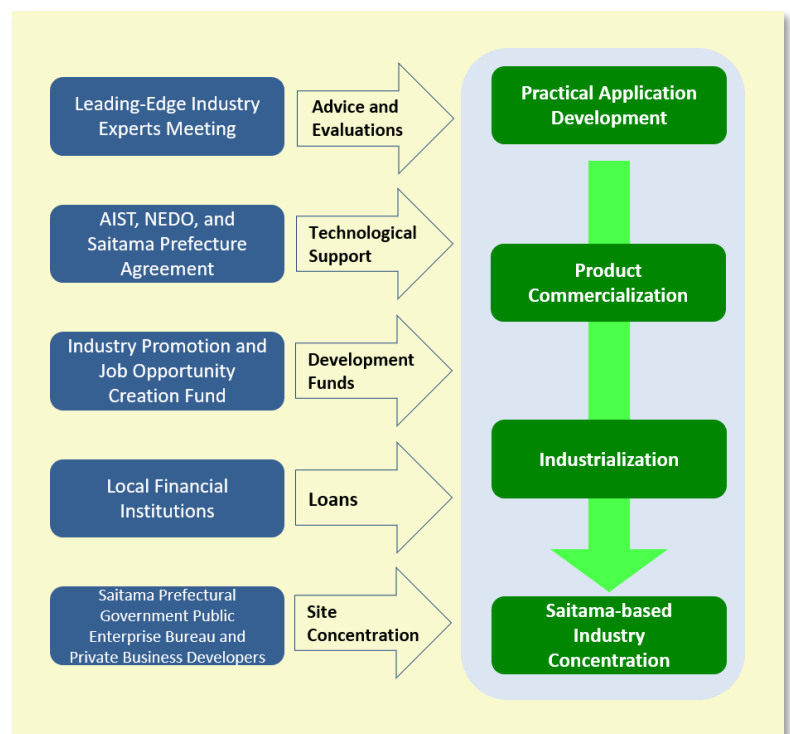
The board of experts in leading-edge technologies offer advice and provide verifications and evaluations of development initiatives related to the Project.

◆ The Leading-Edge Industry Development Agreement

Formed in February 2014, this technological support agreement established collaboration between Saitama Prefecture and two of the foremost research organizations in Japan: the New Energy and Industrial Technology Development Organization (NEDO) and the National Institute of Advanced Industrial Science and Technology (AIST).

◆ Connections with Saitama-based Financial Organizations

Saitama helps make connections with local financial organizations to provide trouble-free loans.



Utilizing the Latest Technologies such as AI and IoT in the Leading-Edge Industry Design Project

The board of experts advised that adaptation of the latest technologies such as AI and IoT that are commonly shared across all key fields is needed in order to vigorously promote leading-edge industries in Saitama. We will continue to devote efforts towards integrating these new technologies into the leading-edge industry.

Saitama's Future Goals

1. Realization of highly efficient manufacturing utilizing IoT.
2. Development of high-value-added products with AI.
3. Improvement of productivity in a wide range of industries such as services and logistics.

Policy-Making that Anticipates the Future of Industries

1. Experimenting with and testing systems utilizing AI.
2. Human resources development in the fields of AI and IoT.
3. Broadening the scope of applications for robots and drones.

Advanced Materials



The Saitama Leading-Edge Industry Design Project supports businesses that make efforts towards developing new products utilizing advanced materials such as nanomaterials, CFRP and specialty glass. Saitama aims to develop new industries and expand emerging business projects by organizing technology exchange meetings to introduce the latest technological initiatives and coordinating product development efforts through seminars and workshops involving potential buyers.

Nano-Carbons Leading-Edge Technology Exchange Meetings

By hosting technological exchange meetings regularly, Saitama actively promotes the concentration of advanced materials-related information, human resources, and technological expertise within the prefecture. Furthermore, Saitama takes the initiative to organize hands-on seminars to elevate practical skills in product development, analysis, and evaluations.



Lecture



Hands-on Seminar

Leading-Edge Product Development Subsidy (2019-2020)

This subsidy assists businesses' developmental efforts, encouraging the growth of leading-edge industries in Saitama.

- ◆ Costs Covered: Up to 2/3
- ◆ Maximum Subsidy: 15,000,000 JPY

Selected Themes (FY2019)

- ◆ Dev. of nanocarbon-Pd composite resin for 3D printer
- ◆ Dev. of high-strength nanocarbon thin film for SUS304 roll

Support for SMEs to utilize advanced materials

Saitama hosts workshops aiming at product development attended by a group of businesses, including potential buyers and users for expanding business chances. Saitama also organizes seminars in which Saitama-based small and medium-sized enterprises can get the chance to learn from actual examples of how large manufacturers utilize advanced materials, allowing for matching between technological ideas and business needs.

Exhibition Participation Support

Saitama supports participation in exhibitions to provide opportunities for market expansion, business matching leading to increased demand for products, and the promotion of prefecture-based businesses' advanced technology and products.

Participation Support Achievements:

- ◆ nano tech 2020
- ◆ Sai-no-Kuni Business Arena 2020



nano tech 2020

Initiatives and Developments Accomplished:

Industry-Academia Collaborative Development Project (2014-2018)

This project supported research and development that combined the innovative ideas of research organizations and universities with the technological capabilities of businesses.

Selected Themes (FY2018)

- ◆ Development of a new metal mold processing technology using nano-carbons (TAMA Association)
- ◆ Development of new water-based adhesive and paint by nano-emulsification technology (JAMSTEC)

Product Development Cost Support (2015-2018)

- ◆ **Example: Sugita Densen Co., Ltd.** has developed a tape with sensing functions by applying their thread-plying technology to produce twist yarn made of double-wall carbon nanotubes of high purity, which has high potential for robots and wearable products.



Check out the video!

Medicine · Healthcare



With a high concentration of optoelectronic (optical) industries ideal for the production of medical equipment, Saitama Prefecture boasts the highest pharmaceutical and medical equipment production revenue in Japan, and has great potential for medical-related industry growth. Taking advantage of the prefecture's strengths, Saitama is striving to promote further innovation of medical equipment and achieve an even higher concentration of Saitama-based, medical-related industries.

Saitama Medical Innovation Network

Saitama Prefecture and Saitama City are jointly operating a support platform for medical-related businesses, universities, research organizations, and medical organizations, as well as the business entities aspiring to enter into the medical equipment industry. The Saitama Medical Innovation Network promotes **medical-engineering** and **industry-academia-medicine** collaborations through a variety of initiatives, including hosting seminars and matching the needs of the medical world with relevant institutions and organizations.

Leading-Edge Product Development Subsidy (2019-2020)

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- ◆ Maximum Subsidy: 15,000,000 JPY

Selected Themes (FY2019)

- ◆ Dev. of disposable micro forceps for medical assistance robots
- ◆ Development of extensive disease diagnosis system using microarray biochips

Exhibition Participation Support

The Project supports participation in domestic exhibitions and academic conferences, as well as in overseas trade shows in cooperation with JETRO Saitama.

Support examples:

- ◆ General Meeting of the Japan Society of Endoscopic Surgery
- ◆ Medtec Japan



Medical Equipment Commercialization Subsidy (2019-2020)

Aimed at promoting the commercialization of medical equipment-related businesses by Saitama-based SMEs, this project supports a portion of the costs incurred for clinical or non-clinical tests and any consultation or evaluation processes related to pharmaceutical affairs for product improvement.

- ◆ Costs Covered: Up to 50%
- ◆ Maximum Subsidy: 5,000,000 JPY

Selected Themes (FY2019)

- ◆ Dev. of non-vascular guidewire to be used in endoscopic examination and treatment of pancreatic and bile ducts, etc.
- ◆ Development of the successor of the IRIS monitor: fetal electrocardiogram monitor

3-Way Collaboration Development Model

Manufacturing industries, medical organizations, and manufacturing and sales businesses form a 3-way collaboration to develop a marketable product that reflects current medical needs. In addition, Saitama serves as a bridge between medical institutions and businesses in the evaluation of products in medical fields.

Initiatives and Developments Accomplished:

Subsidy for Development and Environmental Testing of Medical Equipment Using AI (2018-2019)

This project supported development and demonstrative experiments for medical equipment using AI technology carried out by a joint development team of Saitama-based businesses and medical institutions.

Selected Themes (FY2018-FY2019)

- ◆ Development of cancer cytodiagnosis support system using machine learning (Saitama Univ.)
- ◆ Development of endoscopic image diagnosis support system using AI (AIST)

Industry-Academia Collaborative R&D Project (2014-2018)

This project supported research and development that combined the innovative ideas of research organizations and universities with the technological capabilities of businesses.

Selected Themes (FY2018)

- ◆ Development of a spinal cage system using the ion shot method (Akita Prefectural Hospital Organization)
- ◆ Development of centrifugal blood pump with a magnetically suspended impeller (Saitama Univ.)

Support for Obtaining Overseas Certification (2015-2019)

The project offered subsidies to cover a portion of the costs incurred to obtain international certifications such as ISO13485 and CE mark.

Product Development Cost Support (2015-2018)

- ◆ **Example: R-NanoBio Co. Ltd.** has developed an automatic biochip measurement device capable of testing 41 types of allergens from a single drop of blood.



Check out the video!

Robotics · AI · IoT



Robotics and AI/IoT technologies have shown an emerging presence in manufacturing as well as medicine and caregiving, infrastructure, agriculture, and other fields, contributing to the improvement of productivity, providing solutions for labor shortages, and creating new services. With an aim to raise productivity and strengthen the competitiveness of Saitama-based SMEs, the prefecture provides support towards the introduction of robotics and AI/IoT technologies and the training of specialized human resources.

Saitama AI/IoT Platforms

Saitama Prefecture is operating the Saitama AI/IoT Platform (website) in order to encourage Saitama-based businesses to introduce and utilize AI/IoT technology. This platform consists of the Saitama Prefecture AI Portal Site and the Saitama Prefecture IoT/LPWA Portal Site.

<https://www.ai-lpwa.saitama.jp/>



◆ AI Portal Site

The Saitama Prefecture AI/IoT Consortium offers various exclusive content to consortium members including a trial version of image recognition AI and AI software that can be used without programming.

◆ IoT/LPWA Portal Site

Saitama has conducted various field experiments and trials using the LPWA (Low Power Wide Area) communications network which may help provide solutions for various regional issues, and the reports and data collected from such initiatives are disclosed in this portal.

***Please see the back cover of this brochure for more details on the Saitama Prefecture AI/IoT Consortium.**

Robotics Business Consortium

The Robotics Business Consortium is a collaborative platform for robotics businesses, users, universities, research organizations, and financial institutions, aiming to actively promote an increased concentration of robotics industries in Saitama Prefecture.

Main initiatives include:

- ◆ Networking events for robotics businesses
- ◆ Business-Academia idea matching

Exhibition Participation Support (Robotics)

Saitama supports participation in exhibitions to provide opportunities for market expansion, business matching leading to increased demand for products, and the promotion of prefecture-based businesses' advanced technology and products.

Participation Support Accomplishments:

- ◆ International Robot Exhibition 2019
- ◆ Sai-no-Kuni Business Arena 2020

Subsidy for Development and Environmental Testing of Equipment Using AI (2019-2020)

This project supports development and demonstrative experiments for devices and equipment using AI technology carried out collaboratively by Saitama-based businesses, universities, and research organizations.

- ◆ Costs Covered: Up to 100%
- ◆ Maximum Subsidy Amount: 25,000,000 JPY

Selected Themes (FY2019)

- ◆ Development of a compact-sized ultrasonic diagnostic device which automatically evaluates muscle strength for preventive health care (Tohoku Univ.)
- ◆ Development of a service platform for the visual inspection of optical glass parts and metal-processed parts (Toyo Univ.)

Human Resources Training in Robotics Technology

This project organizes training for engineers to learn to design and develop robots, and seminars covering knowledge necessary for robotics businesses, such as intellectual property protection and marketing, as well as human resource training programs for learning the technology and know-how necessary for the introduction of AI/IoT systems.

- ◆ Hands-on seminars in robotics engineering
- ◆ Lectures on practicalities of robotics businesses
- ◆ Human resource training in AI/IoT

AI / IoT / Robotics System Trial Subsidy (2017-2020)

Aimed to help increase productivity among Saitama-based manufacturers, this project supports and verifies the effects of introducing AI/IoT/robotics systems to manufacturing processes.

- ◆ Costs Covered: Up to 2/3
- ◆ Maximum Subsidy Amount: 5,000,000 JPY (AI)
2,000,000 JPY (IoT) 3,000,000 JPY (Robotics)

Initiatives and Developments Accomplished:

Product Development Cost Support (2015-2019)

◆ **Example: Biko, Inc.** has developed an AI server system to automatically control and monitor cleaning robots.



Check out the video!

Industry-Academia Collaborative R&D Project (2015-2019)

This project supported a variety of robotics development initiatives conducted through collaborations between universities and Saitama-based businesses.

Selected Themes (FY2018)

- ◆ Dev. of robot that manufactures car clay models (AIST)
- ◆ Dev. of system with privacy protection and fall detection (Saitama Prefectural University)

New Energy



Increased demand for energy and efforts to decrease fossil fuel dependence have emphasized the importance of renewable energy along with energy-saving and energy-storage perspectives in modern society. Saitama is actively supporting the research and development of smart houses, storage batteries, hydrogen energy, and other technologies in the high-growth-potential field of new energy. The prefecture is also promoting new energy-related industries through new technologies produced by Saitama-supported R&D.

Saitama Next-Generation Housing Industry Project (Saitama Industrial Promotion Public Corporation)

【The First-stage Next-Generation Housing Project】(2014-2016)

- ◆ Development of geothermal heat pump technology
- ◆ Development of high insulation glass film technology
- ◆ Development of wood-based insulation material technology
- ◆ Development of EMS (Energy Management Solutions) technology

【The Second-stage Next-Generation Housing Project】(2017-2018)

- ◆ Development of energy-saving device that interlocks with natural energy management technology
- ◆ Development of high-efficiency, multi-output power supply
- ◆ Development of hybrid power generating panel that integrates a solar power generator and a solar heat collector
- ◆ Development of high-efficiency floor heating



High-efficiency, multi-output
power supply device



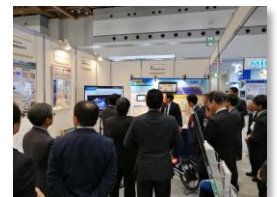
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Exhibition Participation Support

Saitama supports participation in exhibitions to provide opportunities for market expansion, business matching leading to increased demand for products, and the promotion of prefecture-based businesses' advanced technology and products.

Participation Support Accomplishments:

- ◆ ENEX2020
- ◆ Sai-no-Kuni
Business Arena 2020



Support on Business Entry to CEMS

This project supports business' efforts to enter the CEMS (Community Energy Management System) business, aiming to introduce the products developed for the Saitama Next-Generation Housing Industry Project to non-housing markets.

Development of Next-Generation Storage Batteries (SAITEC)

The Saitama Industrial Technology Center has made the world's first prototype of a rechargeable magnesium battery that works at room temperature. It is anticipated for use in various small consumer products.



Coin type



Laminate type

Initiatives and Developments Accomplished:

Subsidy for Customization and Test-Marketing of Products (2019)

This project supported efforts for product customization to suit the needs of customers as well as cost reduction efforts aimed at mass production.

Selected Themes (FY2019)

- ◆ Improved manufacturing process of a customized thermoelectric transducer for energy-saving purposes
- ◆ Customization of storage batteries and energy-saving devices
- ◆ Experimental testing of hot water floor heating system using solar water heater

Industry-Academia Collaborative R&D Project (2014-2018)

This project supported a variety of research and development initiatives through collaborations between universities, research institutes, and Saitama-based businesses.

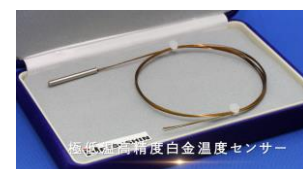
Selected Themes (FY2018)

- ◆ Dev. of high-endurance thermoelectric module for unused thermal generator (AIST)
- ◆ Development of beta-gallium oxide six-inch substrate (Shinshu Univ.)

Product Development Cost Support

(2015-2018)

NETSUSHIN Co., Ltd. has developed a high precision ultra-low temperature platinum thermal sensor that is capable of measuring temperature at an ultra-low temperature of -253°C (temperature of liquid hydrogen) with precision.



Check out
the video!



Air · Space · Mobility



The rapidly growing aircraft industry is expected to double its presence in the marketplace over the next twenty years. Consisting of approximately 3,000,000 parts, about 100 times the amount of parts used in automobiles, aircrafts represent a concentrated body of leading-edge technology, and growth in the aircraft industry is anticipated to bring multiplied effects to supporting industries. Saitama Prefecture is implementing various support measures for Saitama-based SMEs that have cultivated advanced technological expertise through the automobile and electronics industries and are now looking to enter the air and space industry. In addition, the Prefecture is also supporting various initiatives and experiments to realize a smart mobility society.

Study Meetings about Entry into the Aircraft Industry

Saitama-based businesses seeking to enter the aircraft industry can take advantage of marketplace entry and technology development support initiatives such as seminars and factory observation tours of major aircraft parts construction companies.



Observation Tour of Japan Airlines' Maintenance Center (Narita Airport)

Subsidy for Smart Mobility Demonstrative Experiment

This project covers part of the cost for demonstrative experiments of technologies related to smart mobility.

- ◆ Costs Covered: Up to 1/2
- ◆ Maximum Subsidy Amount: 10,000,000 JPY

Selected Themes (FY2019)

- ◆ Demonstrative experiment of autonomous driving on public roads around Urawa Misono Station in 2019
- ◆ Practical application and commercialization of test vehicles for autonomous driving buses capable of driving on public roads and integration of AI technology

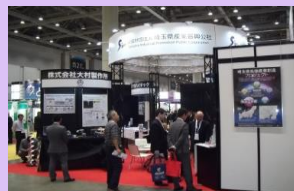


Check out the video!

Exhibition Participation Support

Saitama supports participation in exhibitions to provide opportunities for market expansion, business matching leading to increased demand for products, and the promotion of prefecture-based businesses' advanced technology and products.

- ◆ Aeromart Seattle
- ◆ Aeromart Toulouse
- ◆ Japan International Aerospace Exhibition
- ◆ Aeromart Nagoya



Japan International Aerospace Exhibition

Operations of Demonstrations and Testing Fields

This project provides testing venues for businesses, universities, and research organizations to conduct demonstrations and experiments with drones and other technologies.

(Former Moroyama Senior High School and other locations.)



Flight test of a drone on the school grounds

Supporting the Construction of an Integrated Production System (2016-2020)

Saitama supports efforts by collaborating SMEs conducting machining, surface processing, nondestructive inspection, etc. to build an organizational framework which can provide a one-stop service for orders from trade partners.

Prototype Example:

Rocket parts, equipment and associated accessories

Subsidy for Obtaining QC Certification (2014-2020)

Subsidy to cover part of the cost to obtain necessary trade certificates in aircraft trading, such as JISQ9100 and Nadcap.

- ◆ Costs Covered: Up to 50%
- ◆ Maximum Subsidy: 1,500,000 JPY

Initiatives and Developments Accomplished:

Autonomous Bus Driving Experimental Test (2019)

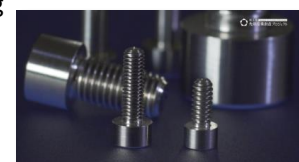


Experimental operation of an autonomous bus was conducted at the Kumagaya Rugby Stadium during the Rugby World Cup 2019.

Business Entry and Commercialization Support Subsidy

(2014-2019)

KIT SEIKO Corporation has developed processing technology for the mass production of large-sized titanium alloy and heat-resistant alloy stud bolts for aircrafts used in the air and space industry.



Check out the video!

Saitama AI・IoT Consortium

Saitama Prefecture has launched the Saitama AI・IoT Consortium to encourage Saitama-based businesses to utilize AI technologies, aiming to improve productivity and create new businesses.

The consortium serves as a platform for businesses, universities and research organizations, commercial and industrial associations, financial institutions and local governments, and offers various types of activities such as seminars, workshops, and networking gatherings. Please feel free to inquire about the consortium and membership registration.

1. Consortium Activities
 - (1) Hosting seminars, training, and workshops
 - (2) Organizing networking gatherings
 - (3) Operation of the AI portal site ... and more!
2. Membership types
 - (1) General member: Saitama-based manufacturers
 - (2) Support member: Any businesses, groups, and organizations that endorse the consortium's goals
3. Membership fee
Free of charge (subject to change in the future)
4. Application for registration
Please apply from the URL or QR code



https://s-kantan.jp/pref-saitama-u/offer/offerList_detail.action?tempSeq=11967

**Contact: Next-Generation Industries Base Development Division,
Department of Industry and Labor, Saitama Prefectural Government**
TEL: 048-830-3935 FAX: 048-830-4816 E-mail: a3760-05@pref.saitama.lg.jp

Saitama Industrial Technology Center (SAITEC)

Technological Support, R&D Support, and Commercialization Support are the three basic types of support that SAITEC offers. In addition, SAITEC provides any support that meets current needs such as introduction and utilization of AI technology and strengthening of designing power. Please contact us for free technical consultations.

SAITEC:
SKIP CITY, 3-12-18 Kamiaoki,
Kawaguchi-shi, Saitama-ken 333-0844
TEL: 048-265-1311 FAX: 048-265-1314
E-mail: sien@saitec.pref.saitama.jp
<https://www.pref.saitama.lg.jp/saitec/index.html>



Saitama Industrial Promotion Public Corporation (Kita Yono Office)

Saitama Leading-Edge Industry Support Center offers support services to businesses working on initiatives in the fields of leading-edge technologies, particularly in advanced materials, medicine and healthcare, robotics, new energy, and air and space. Please feel free to inquire about our comprehensive services!

TEL: 048-711-6870 FAX: 048-857-3921 E-mail: sentan@saitama-j.or.jp

Saitama Next-Generation Automobile Support Center offers various kinds of support to businesses not only in the next-generation vehicle industry (HV, EV, FCV) but also the conventional automobile industry with technological, sales, and marketing assistance.

TEL: 048-621-7051 FAX: 048-857-3921 E-mail: jidosha@saitama-j.or.jp

Contact for consultations on AI and IoT:

Aimed to support the introduction and utilization of AI and IoT technologies and assist creation of related new businesses.

TEL: 048-621-7051 FAX: 048-857-3921 E-mail: iot@saitama-j.or.jp

Open Monday to Friday 9:00 to 17:00

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<https://www.saitama-j.or.jp/english-aboutus/>

Inquiries



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Saitama Prefectural Mascots
Kobaton and Saitamatch