YOKOHAMA SMART CELL

～ To Create Future Community ～

YOKOHAMA SMART COMMUNITY

【Planning Office Refer to PALTEK】
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URL : http://www.smartenergy.co.jp/yokohama/

What is Yokohama Smart Community?

Hitoshi Arima

Yokohama Smart Community Chairman
Fukuoka Smart House Consortium Vice Chairman
dSPACE Japan K.K. President
Skills Management Association Vice Secretary General
Smart System Verification and Validation Technology Association President

Greetings on the occasion of the opening of Smart Cell in Yokohama Smart Community

Since its foundation in June 2011, Yokohama Smart Community has been actively following our motto of “We will create a town which supports life and culture with science technology while *learning* from and utilizing nature”.
As the number of participating organizations has expanded from the initial 16 companies to 87 companies (number of member companies as of August 2013: 87 companies, 5 research participants, and 6 advisors), we are pleased that our activity concept has gathered broad support.
In order for people to live affluently, we think we should not seek a solution that relies solely on technical points but rather seek a life which uses energy that coexists with nature, with less burden to the environment. By cleverly using natural energy, we believe a flexible energy system can be constructed at low cost, which leads to such solutions as CO_2 reduction and solving the food shortage problem.

Recently, “Smart Cell”, a research and experimental house, has started operating as one of the activities of Yokohama Smart Community. This project has been gathering cooperation from a number of participants since its conceptual stage. We would like to express our appreciation to the supporting companies as well as to Yokohama city office for their contributions. So far, we have attempted to promote interaction and sharing of information between participating members through such activities as seminars and exhibitions. We are looking forward to seeing Smart Cell being used as a place where each company conducts demonstration experiments, future schemes are discussed, and new communication is created.

In the future as now, we will continue to strive to promote these activities, supporting communication between participating members with the utmost consideration. We humbly ask everyone for their support and cooperation.

YOKOHAMA SMART COMMUNITY

Yokohama Smart Community – Smart Cell

【Location】tvk Housing Plaza
6-1 Nishihiranuma-cho, Nishi-ku, Yokohama

YOKOHAMA SMART COMMUNITY
Smart Cell Project
Sponsorship program participating companies

Sponsor

Smart Energy LABORATORY
dSPACE
muRata INNOVATOR IN ELECTRONICS
kawamura
エネルギー・フロンティア TOKYO GAS
Ubiquitous
OTSL
スターエンジニアリング

Products Sponsor

BASF The Chemical Company
スカイライトチューブ®
NEA
GADELIUS Established 1890
株式会社 太陽住建 Taiyo Jyuken

Planning Office

PALTEK SOLUTION SUPPLIER PALTEK

Support

City of Yokohama
Television KANAGAWA, Inc.

Print

Kohbunsha Co., Ltd.

Project Members (*Alphabetical order)

BASF Japan Ltd.
dSPACE Japan K.K.
Gadelius Industry K.K.
Inosho K.K.
Kawamura Electric Inc.
Murata Manufacturing Co., Ltd.
NIPPON SHEET GLASS ENVIRONMENT AMENITY CO.,LTD
PALTEK Corporation
Smart Energy Laboratory Co., Ltd.
STAR ENGINEERING Co., Ltd.
Taiyo Juken, K.K.
Ubiquitous Corporation

Yokohama Smart Cell

PRODUCTS GUIDE

Active Technology

Murata Manufacturing Co., Ltd.	Intelligent Multifunctional Electric power Inverter
Ubiquitous Corporation	HEMS Cloud Solution

Model-based development

dSPACE Japan K.K.	Smart Energy Solution
Smart Energy Laboratory Co.,Ltd	Model-based solutions - education / development / validation

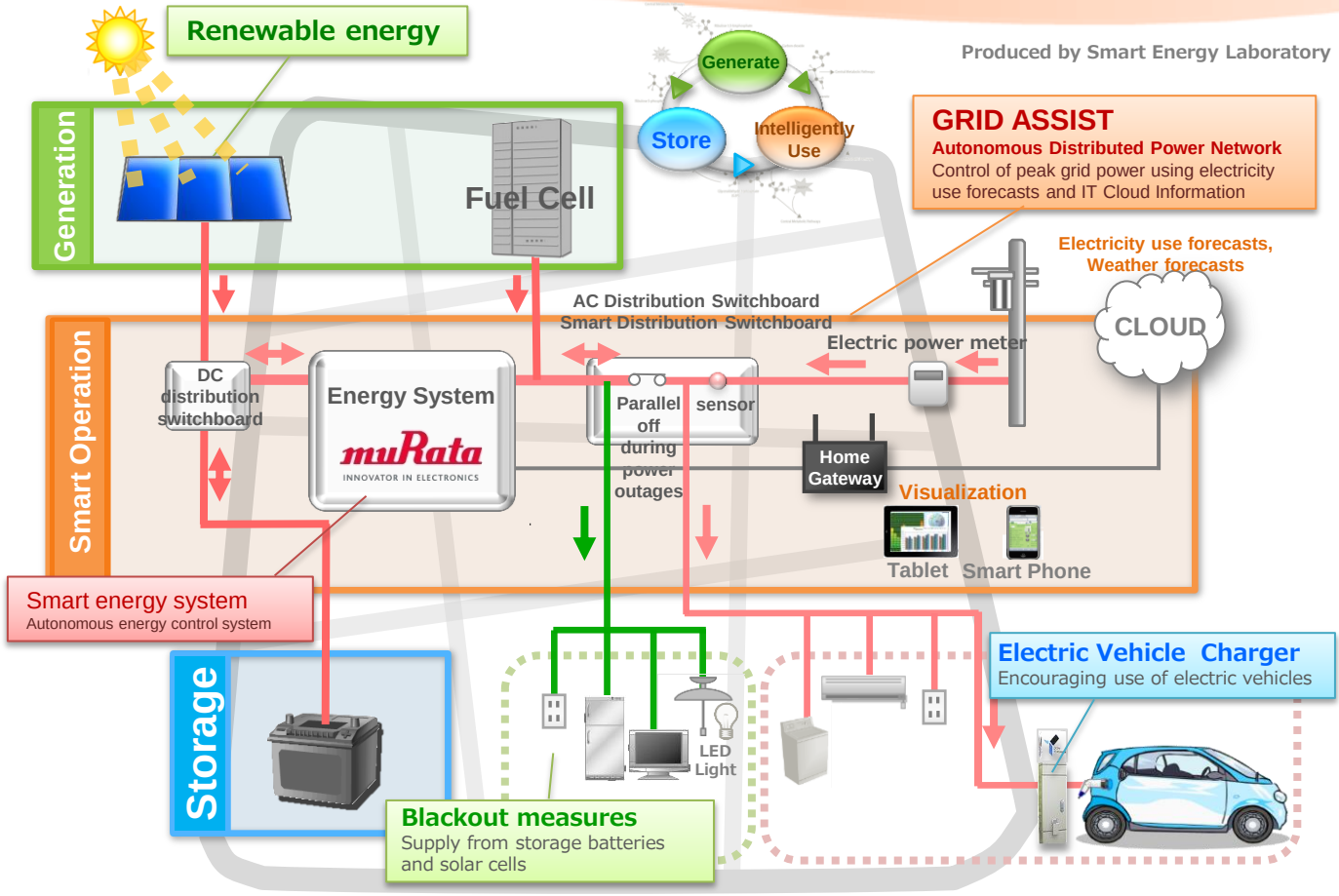
Passive Technology

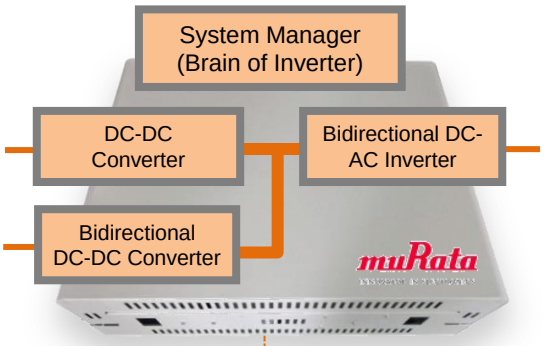
BASF Japan., Ltd	BASF Smart Solution
Nippon Sheet Glass Environment Amenity Co., Ltd	Vaccum Glazing – Spacia

YOKOHAMA SMART COMMUNITY

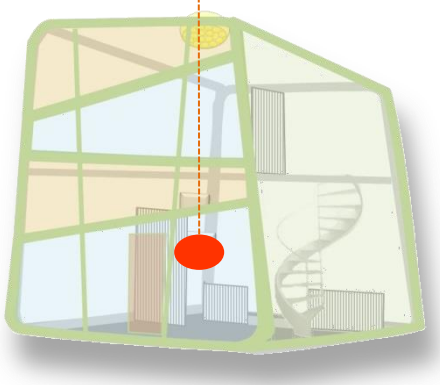
Intelligent Multifunctional Electric power Inverter

Active Technology





Energy System for Next-Generation Smart Houses (Field Test Model)



Features and Functions

Flexible; Enable to **bidirectional (two way) energy exchange and control** to integrate **Generators** (Photovoltaic cells, Cogeneration unit etc.), **Storage batteries** and **Grid power**.

- **Grid power assist;**
  1) **Autonomous operation** during a power outage,
  2) **Peak Shaving** and **Peak Shift** function with Battery and Generator

- Intelligent **two way** energy exchange system that can flexibly respond to all circumstances (in consideration of future systems)

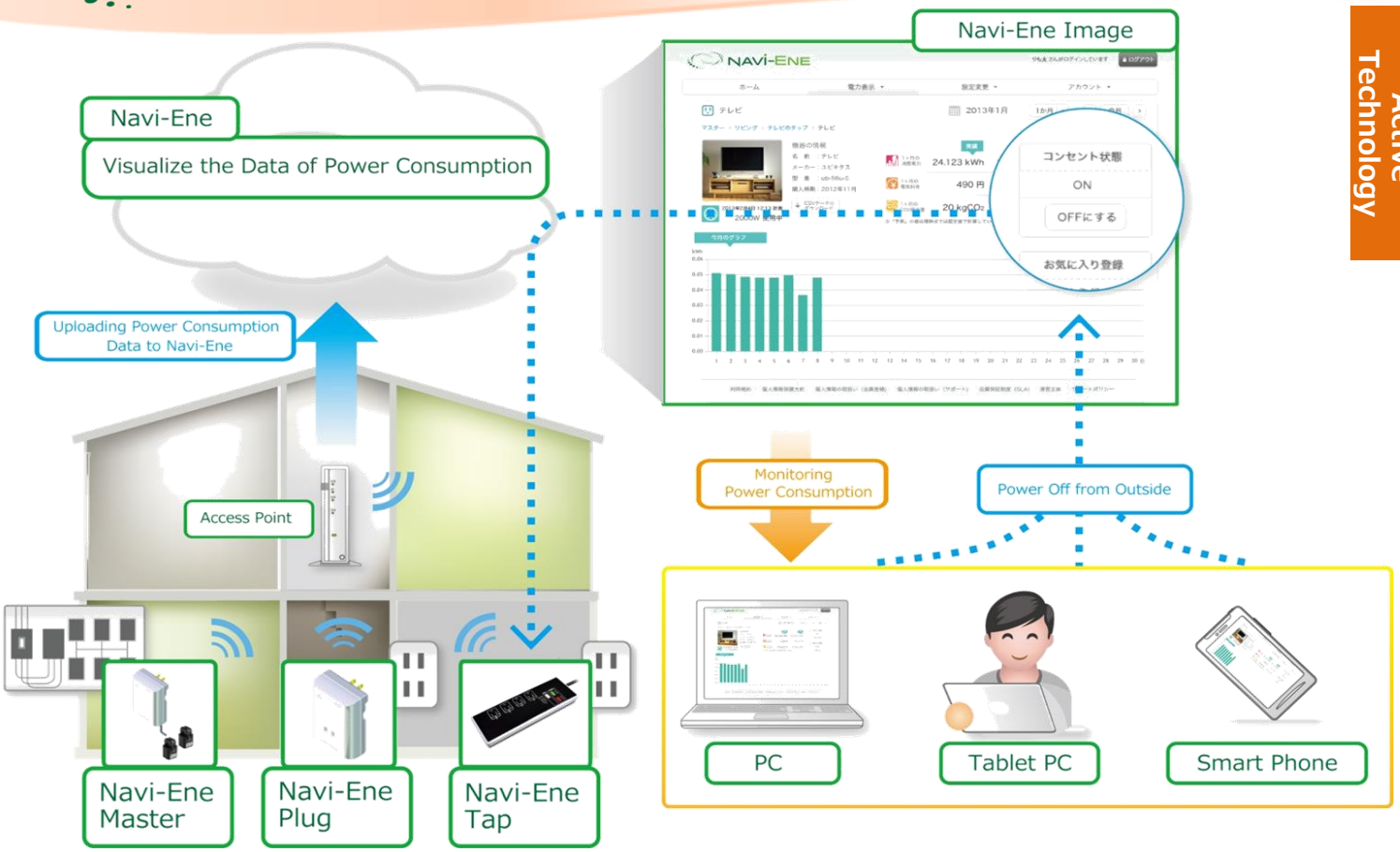
Specification

- **Rated output: 3 kW** (grid-tie and autonomous operation)
- **2-channel input**
  *2 channels for photovoltaic cells or
  1 channel for photovoltaic cells and 1 channel for fuel cells or other input
- **Acceptable Storage batteries: 2 kWh typ.**

muRata
INNOVATOR IN ELECTRONICS

Contact

〒150-0002 3-29-12, Shibuya, Shibuya-ku, Tokyo
Murata Manufacturing Co., Ltd.
Marketing & Communication Planning Section, Matsushima
TEL: +81-(0)3-5469-6141 FAX: +81-(0)3-5469-6154
Mail: akimat@murata.co.jp



Navi-Ene - Power Monitoring Cloud Service

Navi-Ene is the cloud service which you could monitor your daily power usage and realize your life style. The service enables to monitor the power consumption of your connected electric devices by using Navi-Ene "Master", "Plug" or/and "Tap". You can also check out the status using any browser of your PCs, smartphones or/and tablets.

Navi-Ene Device List

NAVI-ENE TAP　NAVI-ENE PLUG　NAVI-ENE MASTER

■Navi-Ene Tap

Navi-Ene "Tap" is the Power Strip which comes with 4 AC plug outlets.

■Navi-Ene Plug

Navi-Ene "Plug" is the AC plug outlet device to attach direct to the wall for air conditionar, refrigerator or any other devices.

■Navi-Ene Master

Navi-Ene "Master" is the clamp type unit to the main power lines in the distributor unit to monitor the entire home power usage.

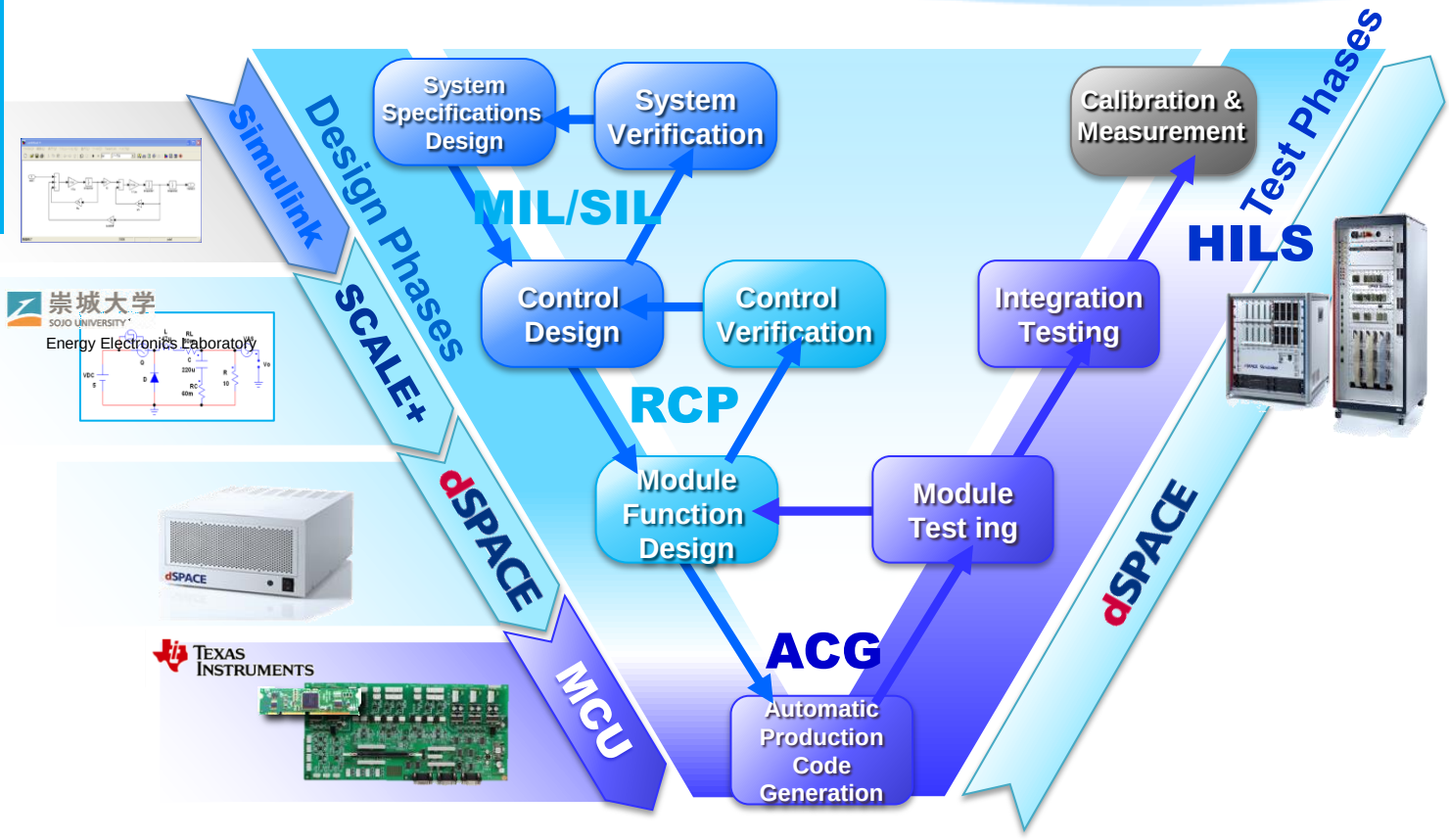
Contact

Ubiquitous Corporation
Nittochi Nishi-Shinjuku Bldg.20F 6-10-1 Nishi-Shinjuku,Shinjuku-ku
Marketing and Communications,Sales Group
Toyota
TEL : 03-5908-3528　FAX : 03-5908-3452
E-Mail : sales_info@ubiquitous.co.jp

Smart Energy Solution

New method for the development of electric power resources, revolutionized by model-based development (MBD)

Model-based development

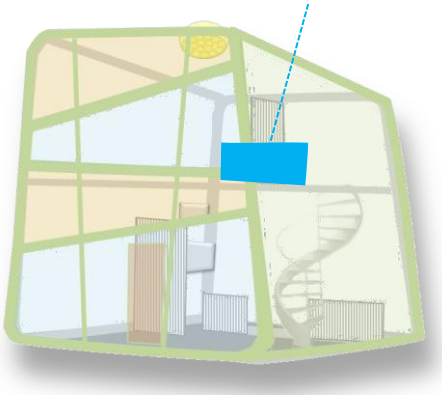


Product Overview

Model-based development (MBD) provides a new environment for development of electric power resources which is highly efficient and has good traceability in the field of “energy system development” in which a solar battery, storage battery, and grid power etc. are integrated as a system.

Strict safety standards, more advanced functional equipment and fierce competition in development mean that the product development environment is getting more and more difficult. In fact, conventional development methods reach a dead end, facing contradictory demands, such as highly complicated system development and efficient process management.

Model-based development environment



dSPACE model-based development introduces “mathematical models”, which are graphically represented, and create control logic virtually.

dSPACE products and models provide all you need for simulation, automation, and reproducibility, and support the new method for development of electric power resources, which solves issues in development environment and encourages newcomers to enter into the energy industry. Models contribute to working efficiency and enable more flexible reuse.

- Off-line simulation
- RCP: Simulation in prototyping environment
- ACG: Automatic production C code generation
- HILS: Feedback simulation in virtual/actual machine environment

Product lineup “Model-based prototyping environment”

- DS1103 : Processor board for real-time control
- ControlDesk : Test execution/Integrated console for management
- TargetLink : Automatic code generator

dSPACE

Contact

dSPACE Japan K.K. Business development division Contact Person: Tsutsui
10F Gotenyama Trust Tower, 4-7-35 Kita-Shinagawa Shinagawa-ku Tokyo 140-0001
www.dspace.jp TEL: +81 3 5798 5460

Model-based solutions
education / development / validation

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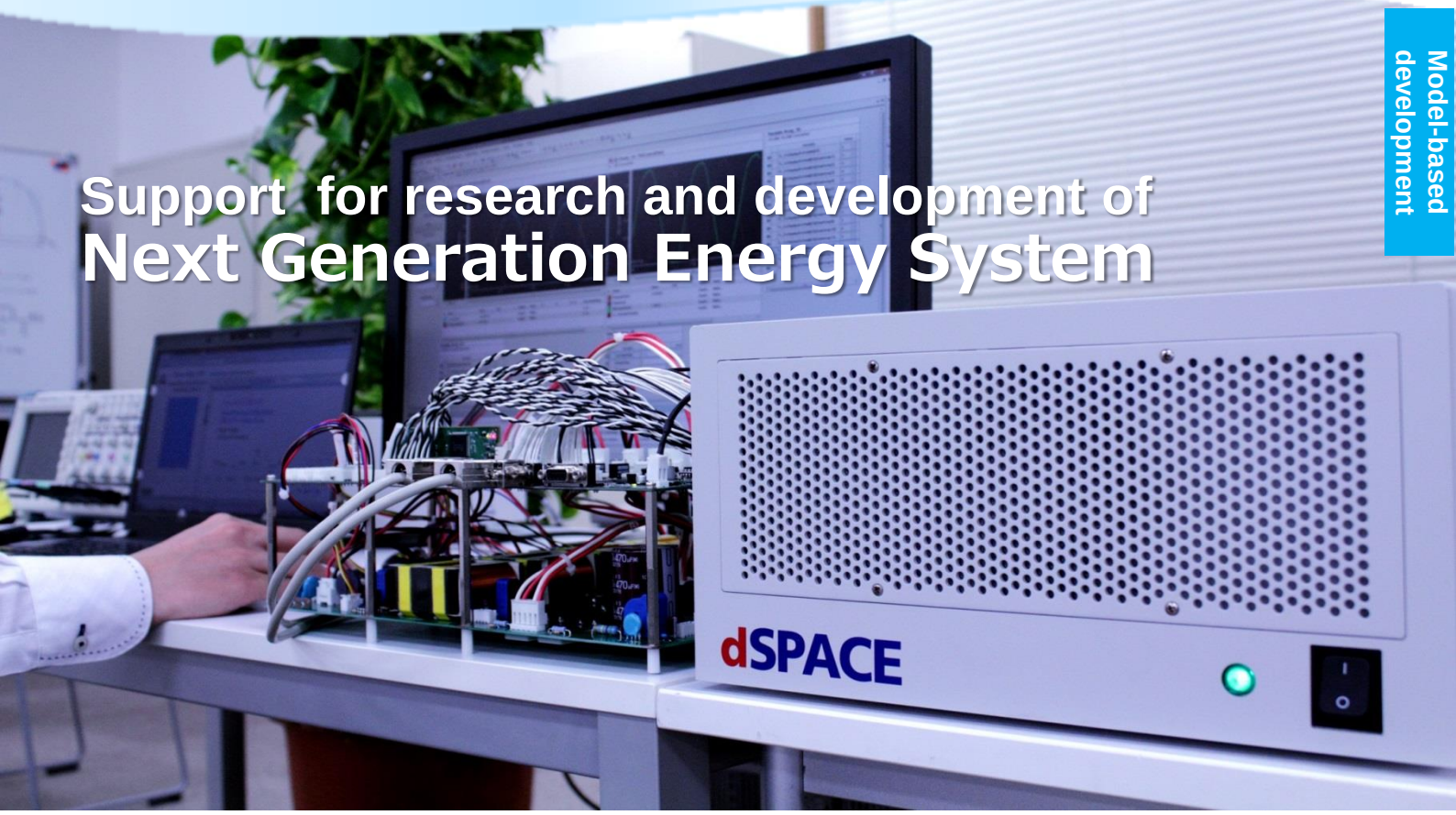
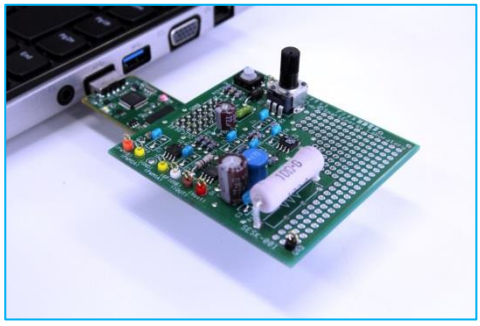
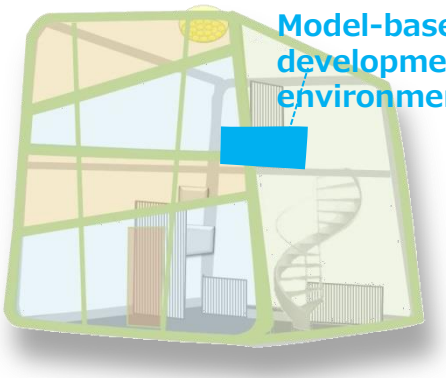
Model-based development



Support for research and development of Next Generation Energy System



Smart Energy Starter Kit
Optimal material to learn Digital power supply and Intelligent power supply for beginner.



Research of next-generation energy system

We have a problem how to cooperate between source of unstable energy like natural energy and usage of energy in our life.
Smart Energy Laboratory research energy system and proposes best way to solve this problem.

Energy system development platform

Smart Energy Laboratory propose and support optimized energy system development platform for design / test / validation who wants to develop high efficiency energy system combined several clean energy line nature energy or fuel cell.
Specially, MATLAB / Simulink numerical tool, Simulation environment using SCALE+ power supply simulator, prototype development environment using dSPACE Inc. tool need to develop high reliability software and shorten the development cycle time.

Platform configuration of photos

- dSPACE model-based development environment
  *Please refer to the page of dSPACE Inc.
- PowerSEL Zero (Power control board)
- PowerSEL 500AC (Main power circuit)
- SCALE+ (Power supply simulator)

Smart Energy LABORATORY

Contact

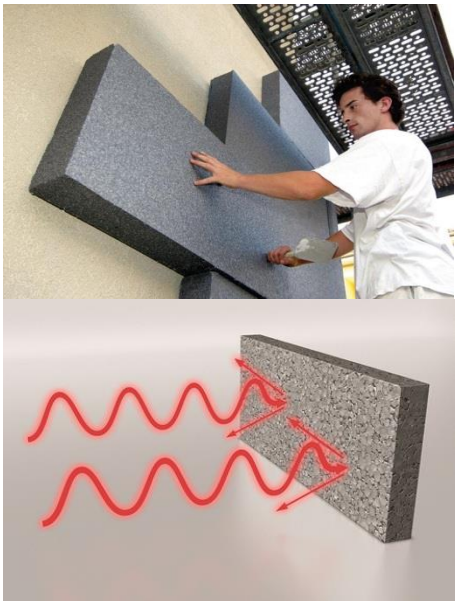
〒411-0943 5F Shiin Yokohama, Koshin Building
2-12-1 Shin-Yokohama, Kohoku-ku, Yokohama, Kanagawa
Smart Energy Laboratory Co.,Ltd
TEL: 045-620-0330 FAX: 045-620-0378
Mail: marketing@smartenergy.co.jp

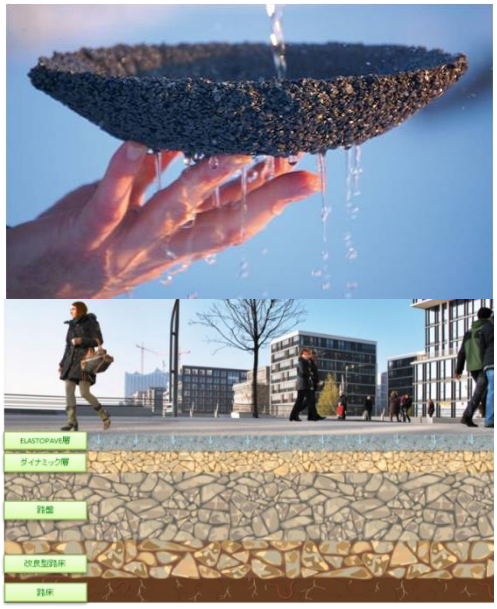
BASF Smart Solution

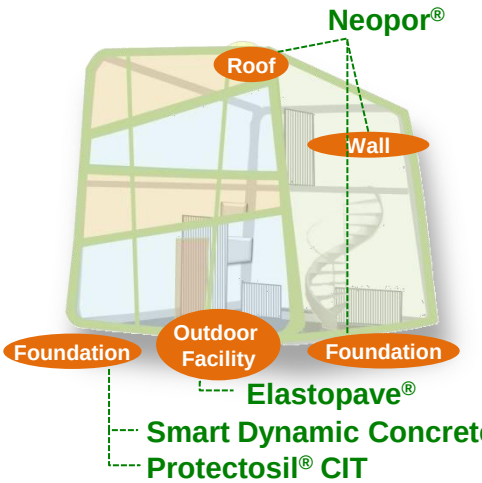
MASTER® BUILDERS ポゾリス

Neopor® Innovation in Insulation

Elastopave®







Material Overview

- Smart Dynamic Concrete is an innovative technology for upgrading the usual concrete to high-fluidity, low-viscosity and self-consolidating concrete by using “Glenium 6000 Series”, a concrete admixture which integrates “RheoMATRIX”, the unique boding agent. It makes casting concrete much easier by reducing compaction work, and achieves shortening work process / saving workers. It also can realize aesthetic and durable concrete.
- Neopor® is the EPS heat insulating material which has achieved Approx. 20% of improvement in insulation efficiency. It is because contained graphite has realized upgrade on absorption and reflective performance of infrared ray. It is eco-friendly material because of NOT using CFC, HCFC and HFC and, shows stable insulation performance because it withstands corrosion. Also, it is an easily-worked material and possible to use in various application.
- Elastopave® is polyurethane material for porous pavement. It realizes a high-intensity pavement of surface by the combination of mineral aggregates (e,g, Marble stone, Quartz, Granite, River gravel, etc). The surface keeps arid condition and swashing is prevented, because rainwater is drained to soil through porosity. It realizes a natural environment in various applications like pathway, parking, courtyard and pedestrian zone.
- Protectosil® CIT is to prevent rebar corrosion. It is also effective on the prevention of water absorption and can contribute to make ferroconcrete structures longer lasting.

BASF The Chemical Company

Contact

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BASF Japan., Ltd Functional Materials & Solutions, Nihira
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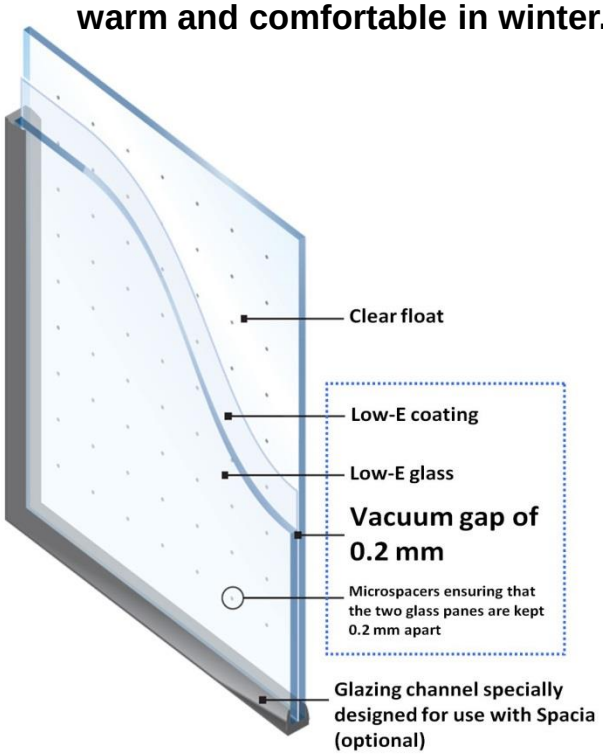
E-Mail : daisuke.nihira@basf.com

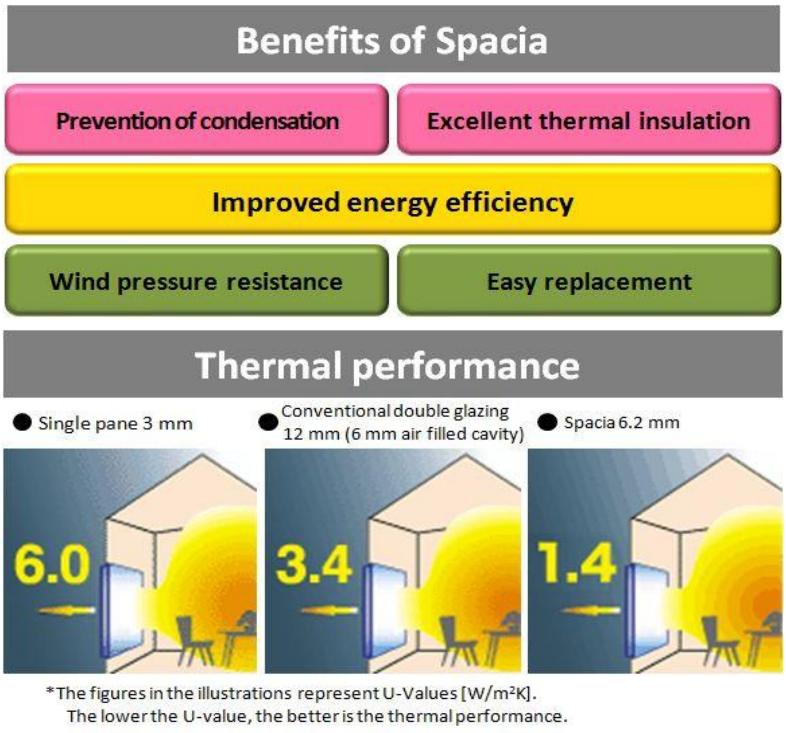
Vacuum glazing Spacia

YOKOHAMA SMART COMMUNITY

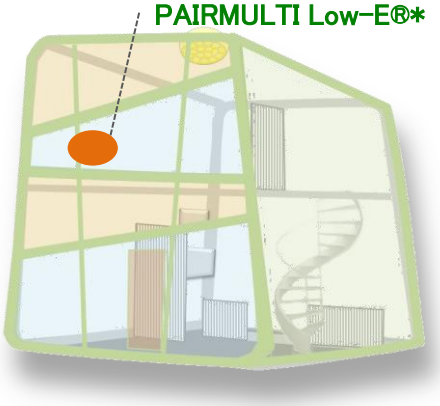
Passive Technology

'Spacia' is thermally-efficient and free from condensation, helping keep your home warm and comfortable in winter.





*The figures in the illustrations represent U-Values [W/m²K].
The lower the U-value, the better is the thermal performance.

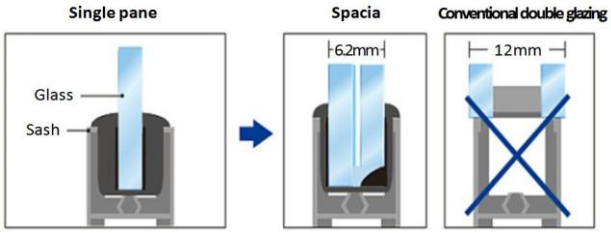


Energy saving

A 0.2 mm vacuum gap minimizes conduction and convection heat losses, while a Low-E coating reduces heat loss through radiation. Thus, Spacia can significantly reduce the air conditioning load.

Easy replacement

Because of its thin structure, Spacia can be easily retrofitted into your existing sashes.



Preventing condensation

Dew condensation often occurs in rainy season or winter when there is a great humidity or temperature difference between the inside of a house and the weather outside. Spacia can prevent condensation from forming on windows until the outside air temperature drops below -26℃*.

*Based on the results of the test conducted in an indoor environment where natural convection was dominant, with outside wind velocity of 3.5 m/s, room air temperature of 20℃, and indoor humidity of 60%.

Sound reduction

The vacuum also offers improved sound insulation performance compared to single pane glass of similar thickness and thus helps create a quieter and more comfortable internal environment.

***Because of size and shape constraints of our exhibition space, instead of Spacia, PAIRMULTI Low-E®, a Low-E double-glazing glass unit, is installed in this Smart House.

Nippon Sheet Glass Environment Amenity Co., Ltd

Tokyo head office

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Yokohama Smart Community – Smart Cell

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URL : http://www.smartenergy.co.jp/yokohama/

YOKOHAMA SMART COMMUNITY – SMART CELL PROJECT

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