

Omron Corporation  
Mitsui & Co., Ltd.  
Okamura Laboratory, Inc.  
Power Systems Co., Ltd.

FOR IMMEDIATE RELEASE

APRIL 26,2004

Agreement on Joint Venture for Full-scale Development of Capacitor System

Omron Corporation ( hereafter “Omron”; President and CEO: Hisao Sakuta), Mitsui & Co., Ltd. (hereafter “Mitsui”; President: Shoei Utsuda), Okamura Laboratory, Inc. (hereinafter “Okamura Laboratory”; President: Michio Okamura), and Power Systems Co., Ltd. (hereafter “Power Systems”, President: Masaaki Yamagishi) have reached an agreement today to proceed with a joint venture aiming to promote the full-scale use of a high performance electric double layer capacitor system (hereinafter “ECaSS®” (Energy Capacitor Systems)).

ECaSS® is a next generation capacitor system invented in 1992 by Michio Okamura, President of Okamura Laboratory. This breakthrough technology increases charge capacity (energy density), which is characteristically insufficient for conventional electric double layer capacitors (a type of condenser), beyond that of lead-acid batteries and nickel-metal-hydride batteries to a level of capacitance close to that of lithium-ion batteries. ECaSS® is an environment-friendly technology and contains no harmful substances such as lead, and is also expected to contribute to solving energy and environmental problems on a global scale as a means of advancing high-efficiency energy use. ECaSS® utilizes nanogate capacitor technology, activated carbon capacitor technology and innovative electronic circuit technology.

This joint venture possesses all of the development, production and sales functions necessary for the commercialization of ECaSS®, by combining the technologies of Okamura Laboratory and Power Systems with the manufacturing know-how and quality assurance capabilities of Omron, along with the procurement and sales and other related capabilities of Mitsui in both domestic and overseas markets of various industries.

From a product and technology standpoint, by using activated carbon capacitor technology (energy density: 6-12Wh/kg), which is already technically complete, as the base, we are able to further the

practical development of nanogate capacitor technology and to plan for mass commercial production, aiming for energy density of 40Wh/kg (equivalent to the effective capacitance of nickel-metal-hydrate batteries) within the fiscal year ending 2004 and 60Wh/kg (nearing the effective charge capacity of lithium-ion batteries) within the fiscal year ending March 2005. In addition, from the standpoint of production, we are aiming to inject 2.5 billion yen in capital investment for mass production during the next 3 years through the fiscal year ending March 2006, and to achieve a production capacity of 300,000 cells (cell: the smallest unit of storage in ECaSS®) per month during the fiscal year ending March 2007. Power systems plans to setup a mass production line in Omron's facilities.

From a business standpoint, we aim to achieve sales of over 10 billion yen in the fiscal year ending March 2007 as the leading company in the electric double layer capacitor market. This market is expected to continue expanding in the future, and the joint venture will focus particularly on expansion in the automobile, industrial equipment, and new energy storage systems markets.

Power Systems, which to date has been carrying out the commercialization of ECaSS®, will be allocating new shares at the end of May, to be purchased in their entirety by Omron and Mitsui. Over the next two years Omron and Mitsui will contribute a total of 2 billion yen in investment and financing. The ratio of investment between Omron and Mitsui has yet to be determined, but Omron is planned to become the largest shareholder. Omron and Mitsui will both dispatch employees to Power Systems. Michio Okamura, the president of Okamura Laboratory, will be the Chairman of the joint venture, the President will be appointed from Omron, and the president of the present Power Systems, Masaaki Yamagishi, and one candidate from Mitsui will be the two Vice-presidents, while other board members are also scheduled to be appointed.

Omron has expanded its business thus far as a major manufacturer in the control equipment field. Relying on the technical ability it has developed in the past, Omron believes it is possible to attempt mass-production of ECaSS®, the market for which is expected to rapidly expand in the near future, and to promote the widespread use of ECaSS®. Omron's decision to take part in this joint venture is based on its hopes to promote efficient energy use and to contribute to society on a wider scale.

Mitsui recognizes that, in addition to the production and sales of capacitors, ECaSS® business will lead to the creation of a number of new applications of ECaSS®. As a general trading company, Mitsui believes that the network it has built up over multiple industries will be indispensable in this respect. Mitsui entered into the partnership after comprehensively examining the positive effects on energy use and the environment that will result from the use of ECaSS®, and realizing the promising nature of this business.

In 1992, Okamura Laboratory combined electric double layer capacitors with electronic circuits to design the ECaSS® storage system. In 1996, Okamura Laboratory discovered the phenomenon that would become the principle of nanogate capacitors, which would further increase the energy density of the capacitor part, and thereafter released the findings of their research, and continued developing and publicizing their research. However, it was believed that in order to spread the use of ECaSS® throughout the world it would be necessary to develop a system to reduce costs, achieve large-scale production and implement sales. It was finally decided that the most optimum plan would be to position Power Systems as the core of the operation, and use the investment, production technology and business capabilities of the ECaSS® group members Omron and Mitsui.

Power Systems has been involved in the research development, production and sales of ECaSS®, and in order to achieve the goal of fully developing the ECaSS® business, and while also strengthening the technical collaboration with Okamura Laboratory for ECaSS®, Power Systems came to the conclusion that it would be best to proceed under a new management system, with investment from Omron and Mitsui.

#### ※ About Electric Double Layer Capacitors

An electric double layer capacitor is a next generation storage device, which allows electricity to be stored as it is without any conversion. In 1879, the German physicist Hermann Ludwig Ferdinand von Helmholtz proposed the theory that the distance between the positive and negative charges generating at the interface of an electrode and electrolyte exist in the distance of the molecular level. The following characteristics are apparent when electric double layer capacitors are compared with secondary batteries that use conventional chemical reactions (lead-acid batteries, lithium-ion batteries, etc.).

- Higher reliability resulting from the use of physical phenomenon not involving chemical conversions
- Possibility of high-speed large-current charge and discharge
- Electric double layer capacitors can be charged and discharged repeatedly, and theoretically have an unlimited lifespan
- Due to the high charge and discharge efficiency, there is low electrical loss, higher electricity accumulation ability.
- Contains no heavy metals, and is environment-friendly
- Low risk of failure or explosion

One drawback is the low level of energy density that can be stored. To date, electric double layer capacitors have only been commercialized for use as the power source for memory

backup and video cassette recorder clocks, etc., which can operate without failure even with a low storage capacity.

※ About ECaSS® (Energy Capacitor Systems)

ECaSS® is a high-performance electricity storage system invented by Okamura Laboratory, constructed from a capacitors and electronic circuits. ECaSS® uses improved capacitor material and electronic circuits, thus realizing a capacity approximately 12 times that of the electric double layer capacitor with the largest storage capacity that is currently on the market. Although pseudo-capacitors (also called redox capacitors; a type of capacitor with storage heightened by combining with lithium-ion batteries, etc.), cannot be directly compared with ECaSS® because they have the characteristics of secondary batteries such as a short cycle life, etc., ECaSS® realizes approximately 4 times the capacity compared with the pseudo-capacitors (in combination with lithium-ion battery: 15Wh/kg) currently on the market.

By using ECaSS®, it becomes possible to efficiently use energy over a broad range from industry use to private use for such applications as hybrid vehicles, storage systems that combine capacitors with natural energy sources such as wind power or photovoltaic generation, as well as the reuse of nighttime electricity during the day.

There are two types of ECaSS®, each based on a different technology.

(1) Activated carbon capacitor (porous carbon type, energy density: 6-12Wh/kg)

Fine pores, which absorb the electrically charged ions, are formed on the electrode of the activated carbon capacitor by breaking down the carbon at high temperature. The activated carbon capacitor is characterized by high output density, but there is a limit to the increase of energy density due to the inability of some of the fine pores formed during the production of the electrode to contribute to the capacity. However, the technology is complete, and focus is being placed on mass production of this type in hopes of spreading its use.

(2) Nanogate capacitor (non-porous carbon, energy density: 20-60Wh/kg)

The electrode of the nanogate capacitor is formed by making pores in the carbon with the ions themselves in the electrolyte solution. A nanogate capacitor is different from an activated carbon capacitor and is characterized by the fact that the ions form the fine pores themselves, and thus the pores unable to contribute to the capacity are not formed. Furthermore, it is possible to form the fine pores that perfectly match the ion size, to obtain higher energy density. However, because an advanced level of technology is necessary for the production of the electrodes, focus is being placed on further improvement of energy density and technical development for the purpose of mass commercialization.

#### ■ Overview of Joint Venture

Company name:	Power Systems Co., Ltd. (continued use of same company name is planned)
Members of the Board:	7 members (Omron 3, Mitsui 2, Okamura Laboratory 1, Power Systems 1)
Chairman:	Michio Okamura
President:	to be selected from Omron
Vice-presidents:	Masaaki Yamagishi from Power Systems, and one candidate from Mitsui (total: 2)
Location of Headquarters:	342-3 Aotocho, Midori-ku, Yokohama (current location of Power Systems)
Production center:	Scheduled for Omron's facilities (location yet to be decided)

#### ■ Overview of Omron

Company name:	Omron Corporation
Business details:	FA (factory automation) systems, control equipment, electronic components, financial systems, social systems, traffic systems, healthcare equipment and services, development, sales, and service of PC peripheral equipments
President and CEO:	Hisao Sakuta
Capital:	JPY 64,082 million
Address:	801 Minamifudoudou-chou, Shirokoji Horikawa, Shimogyo-ku, Kyoto, 600-8530, JAPAN
Consolidated employees:	23,745 (as of the end of September 2003)
Consolidated sales:	JPY 535,073 million (Fiscal Year ended March 2003)

#### ■ Overview of Mitsui

Company name:	Mitsui & Co., Ltd.
Business details:	Domestic sales, import/export, and overseas trading of products, as well as multilateral development of services in the areas of metals, machinery, information, chemicals, energy, and consumer goods.
Representative:	Shoei Utsuda, President
Capital:	JPY 192,487 million

Address: 2-1, Ohtemachi 1-chome, Chiyoda-ku, Tokyo 100-0004  
Consolidated number  
of employees: 39,283 (as of the end of September 2003)  
Consolidated sales: JPY 13,236,683 million (Fiscal Year ended March 2003)

■ Overview of Okamura Laboratory

Company name: Okamura Laboratory, Inc.  
Business details: Research, development, instruction, education, consultation and writing about electronic technology.  
Representative: Michio Okamura, President  
Capital: JPY 15 million  
Address: 2-19-6 Minamiota, Minami-ku, Yokohama  
Number of employees: 5 (as of the end of September 2003)  
Consolidated sales: JPY 43 million (Fiscal Year ended March 2003)

■ Overview of Power Systems

Company name: Power Systems Co., Ltd.  
Business details: Research, development, production and sales of capacitors, and the development, production and sales of capacitor systems including electronic circuits.  
Representative: Masaaki Yamagishi, President  
Capital: JPY 60 million  
Address: 342-3 Aotocho, Midori-ku, Yokohama  
Number of employees: 15 (as of the end of September 2003)  
Sales: JPY 192 million (Fiscal Year ended March 2003)

■ For press related inquiries

Omron Corporation, Communications Division  
Mr. Takayuki Nakamura, Christopher Udell  
takayuki\_nakamura@omron.co.jp  
christopher\_udell@omron.co.jp  
3-4-10, Toranomom, Minato-ku  
Tokyo, 105-0001  
TEL: +81-3-3436-7202

Mitsui & Co., Ltd., Corporate Communications Division,  
Media Relations Dept.

Mr.Eiki Okada

E.Okada@mitsui.com

2-1, Ohtemachi 1-chome, Chiyoda-ku, Tokyo 100-0004

TEL: +81-3-3285-7562

Okamura Laboratory, Inc.

2-19-6 Minamiota, Minami-ku, Yokohama 232-0006

TEL: +81-45-712-7103

Power Systems Co., Ltd., General Affairs Group

342-3 Aotocho, Midori-ku, Yokohama 226-0022

TEL: +81-45-931-2202