



'Robovie-R ver.3" everyday-use communication robot platform



Key features of the product

1. Highly capable of moving over irregular surfaces
2. The cost of drive mechanism was reduced while maintaining power.
3. Enables communication with various sensors and portable terminals.

Robovie-R3 was developed for a robot-based platform for the research of communication between humans and robots. Robovie-R3 is oriented for demonstration experiments of various robot services that will be conducted along shopping streets and stations.

Solutions for our clients

Robovie-R3 is a product designed for researchers who research communication between robots and humans, and developers of robot services. We have realized unparalleled low prices for robots that can move over heights of 1m. Because the robot platform is equipped with functions required for providing various kinds of services, such as shopping and showing the way, users can reduce hardware development costs. With the built-in notebook PC that can run Windows software, the robots can communicate with various sensors and existing products including mobile phones, and thus have high versatility and can be used for extensive service development.

Vstone Co., Ltd. <http://www.vstone.co.jp> English
2-15-28, Mitejima, Nishiyodogawa-ku, Osaka City, Osaka



LiFePo₄ type lithium-ion rechargeable batteries



Key features of the product

1. More than 2,000 cycles in use
2. Small and lightweight
3. Large 100 Ah capacity

We are one of a few companies that market LiFePo₄ type lithium-ion rechargeable batteries in Japan. Our rechargeable batteries have a large capacity of 100 Ah and their weight is less than half of lead batteries. Moreover, the rechargeable batteries have a long service-life with more than 2,000 cycles total.

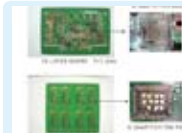
Solutions for our clients

We continue to develop and sell secondary batteries. By providing 100 Ah large capacity, iron-phosphoric acid type lithium-ion rechargeable batteries, we can contribute to long-term power supplies and reduce electricity shortages. The assumed customers are companies that are planning to use solar panels and household storage batteries, and companies that require electricity in plants and for on-site work. We also specialize in inverters and LED lighting systems that can run on 100V AC supplied from batteries. We can develop products according to customer needs.

YASHIMA DENGYO CO., LTD. <http://www.dlgbattery-japan.com> Japanese only
4-13-3, Nakamoto, Higashinari-ku, Osaka City, Osaka



High-quality, low-cost printed circuit boards



Key features of the product

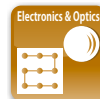
1. Pattern design that reduces product costs
2. Proposal of new base materials according to product applications
3. Quick delivery after processing from trial manufacture to commercial production of lots

Since we handle both pattern design and board production by taking the process procedure and manufacturing specs into consideration, we can provide low-cost, high-quality products. Moreover, given the diversity of applications and operating conditions of printed circuit boards, we can propose a selection of better base materials.

Solutions for our clients

Since our boards are mainly used as customized parts in electronic products, we have electronic product makers as our customers. We make individual wiring boards for each product. Therefore, to develop a single product, we perform all processes in-house from design and trial manufacture to board manufacture and product launch. Thus, we can quickly deliver low-cost high quality products.

MURAKAMI ELECTRIC IND. CO., LTD. <http://www.murakami-elec.co.jp> Japanese only
2-4-20, Kamihigashi, Hirano-ku, Osaka City, Osaka



Optical components for LED lighting systems



Key features of the product

1. Can arbitrarily distribute light using original optical design technology.
2. Can reduce chromatic aberrations by diffraction grating.
3. Can reduce luminance non-uniformity using microlens.

We can provide customized and standard lenses according to customer requirements. Regarding customized products such as general illumination and LCD backlights that use LEDs as a light source, we can propose optical components to meet customer requests, based on our proprietary optical design and ultraprecision machining technologies.

Solutions for our clients

Although LED lighting systems have problems such as brightness non-uniformity on the irradiated surface and chromatic aberrations, our products can improve brightness uniformity with the use of microlens arrays and Fresnel lenses based on ultraprecision machining technology. As for chromatic aberration, we can make lenses with little chromatic aberration by forming diffraction gratings of nanometer precision on the lens surface. These lenses can be applied to LED electric lamps, LCD backlights, automotive headlights, and LED flashes for mobile phones, thus we can contribute to society's need to conserve energy.

Nalux Co., Ltd. <http://www.nalux.co.jp/> English / 中文
2-1-7, Yamazaki, Shimamoto-cho, Mishima-gun, Osaka

ISO 9001
ISO 14001

Good planning capability One-of-a-kind technology Made in Japan Trial production possible Mass-production possible

CONTACT: Osaka Core Manufacturing Technology Network (Detailed information: P13) E-mail : monob2b@mydome.jp



IR absorption filters for CMOS sensors



Key features of the product

1. Less dependence on optical incidence angle compared with coated products
2. High moisture resistance
3. Can be customized according to infrared half-value wavelength, etc.

IR-cut filters and lowpass filters are used with camera CMOS sensors to prevent a reduction in image quality. At present, a large number of digital camera makers have used our IR-cut filters, and we have expanded our market share. Therefore, there are high expectations for our products and markets are expected to expand as a result of that.

Solutions for our clients

The IR absorption filter is laminated with a lowpass filter after a post-process of vapor deposition of an antireflection coating. Therefore, the assumed customers are vapor deposition makers, lowpass filter manufacturers, and electronic manufacturers that produce digital cameras. We specialize in customizing transmission properties to customer requests. Moreover, because we can provide integrated production processes comprised of development, manufacturing, and post-processing, we can enable customers to reduce costs and the burden of managing suppliers.

ISUZU GLASS CO., LTD. <http://www.isuzuglass.co.jp> [English](#)
6-3-6, Minamitsumori, Nishinari-ku, Osaka City, Osaka



Processing various optical elements



Key features of the product

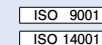
1. Processing of various shapes (various kinds) possible
2. Can perform all processing in-house.
3. Small lots starting from one unit possible

We can handle a variety of processing items and perform all processes from polishing to vacuum deposition, cementing, and painting in-house. Moreover, we can process high precision cylindrical lenses and have realized 0.1% reflectance (450 to 630nm) in vapor deposition, which has been highly rated by customers.

Solutions for our clients

We can meet various needs of customers such as medical equipment makers, measuring instrument makers, universities, and optical research organizations, and can supply high precision, high quality spherical lenses, cylindrical lenses, prisms, glass substrates, and other products of special shapes. Moreover, we specialize in manufacturing of a wide variety of products in small quantities, and meet requests for trial manufacture and special order products for necessary items starting from one unit.

KIKUCHI PRECISION OPTICS CO., LTD. <http://www.kikuchi-kougaku.co.jp/> [Japanese only](#)
213-1, Ohnoshiba-cho, Naka-ku, Sakai City, Osaka



High-quality dies and engineering services concerning glass molding



Key features of the product

1. Provide various high-quality glass molding dies.
2. Provide various engineering services.
3. Provide prototypes and small-lot mass-produced products.

We provide glass molding dies for various fields, from ultraprecise aspheric surface glass lenses to ornamental glass products. Moreover, we can provide total support from trial manufacture to commercial production, including selection of optimal shapes and surface treatments in accordance with various product shapes and glass materials, preliminary consideration of simulation, and proposals on fabrication methods.

Solutions for our clients

Since the founding of the company in 1916, we have continued supporting the glassware manufacturing of our customers. We provide engineering services focusing on dies for manufacturing glassware, from ultraprecise optical elements such as nonspherical glass lenses to ornamental glass products such as glassware. Our engineering services enable customers to speedily develop products in a wide-range of industrial fields that require glassware, such as information appliances, communication, medical treatment, automobiles, and photovoltaic power generation.

Mitsue Mold Engineering Co., Ltd. <http://www.mitue.co.jp/> [Japanese only](#)
4-4-41, Kawata, Higashiosaka City, Osaka



Phosphorus flame retardant



Key features of the product

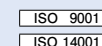
1. Suitable for strengthening fire safety standards and flame-retardant standards
2. Meets non-halogen needs.
3. Optimal as a substitute for bromine fire retardant

Our phosphoric acid ester-based fire retardants are compatible with m-PPE, PC/ABS, PU, PVC, etc. They are particularly used for m-PPE and PC/ABS in consumer electronics such as LCD televisions and office equipment, PCs, copiers and printers.

Solutions for our clients

The assumed customers of our phosphorus flame retardants are compounders. Condensed phosphoric acid ester flame retardants have superior hydrolysis resistance, compared with other phosphorous flame retardants, have lower volatility and generates less gas in resin treatment, they can reduce contamination of processing machines and mold corrosion. In addition, they are eco-friendly as they generate no dioxins when the resin is combusted. You can use our non-halogen-type products in stead of brominated flame retardants that have been ever used for poly-ester, nylon, ABS and so on. Since we also produce phosphorus rare metal extractants, separate and refining makers are also our assumed customers.

DAIHACHI CHEMICAL INDUSTRY CO., LTD. <http://www.daihachi-chem.co.jp/> [English](#)
1-8-13, Hirano-cho, Chuo-ku, Osaka City, Osaka



Good planning capability

One-of-a-kind technology

Made in Japan

Trial production possible

Mass-production possible