

umicore goldpost

Issue 32/2011

The world of noble
and functional surfaces



Dornbracht – pioneer in premium bathroom fittings

The Umicore customer report

The new appearance of Umicore Electroplating

Rhoduna® Alloy

The Queen of noble surfaces

The world of noble
and functional surfaces





Dear Readers,

I am pleased to present you several innovations in this, the latest issue of Goldpost. First and foremost, of course, we report on our newest products Rhoduna® Alloy and Ruthuna

490 – two electrolytes with outstanding features that are capable of capturing the market.

In this issue we also give you an insight into some progresses which are taking place at our company. Last year, the “Electroplating” division became an independent business unit within the Umicore Group. We have made use of this change to link our new logo with the slogan “The world of noble and functional surfaces”. Umicore Electroplating stands for noble and functional surfaces, and this will be reflected in our marketing activities in future. You can find out more about Umicore Electroplating’s new look on pages 4 to 6.

We are also proud of the first Umicore app which became recently available for all smartphones using the iPhone, Android or Blackberry operating systems. You can use it to view worldwide the latest metal prices – and the best part is: the app is free of charge. And of course, in this issue of Goldpost we will also be looking at one of our customers. In the report starting on page 10, you will be able to learn more about bathroom fittings specialist Dornbracht, and how our electrolytes improve the quality of their products.

I hope you enjoy browsing through and reading the new Umicore Goldpost very much!

Yours sincerely

Thomas Engert
Managing Director,
Umicore Galvanotechnik GmbH

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New: The Umicore app

Precious metal prices sent directly to your smartphone

By providing its very own app, Umicore Electroplating is using a state-of-the-art form of corporate communication: quick, easy-to-use, and internationally available. As of now, smartphone users can find out the latest worldwide precious metal prices, in any place and at any time. The app is available in English and German for iPhone, Android and Blackberry systems.

The Umicore Electroplating app has numerous features: It provides a quick and free overview of the latest prices of the most important precious metals: gold, silver, platinum, palladium, rhodium, ruthenium and iridium. In addition, users can view displays of the sales price development over the last 30 days, as well as fixing prices, closing prices and the London fixing. The Umicore app also keeps you up-to-date on products, trade show appearances and innovations from Umicore Electroplating.

One very special feature of the new app is the Rhoduna® Alloy calculator, which is of particular interest to jewellery finishers. The new Rhoduna® Alloy electrolyte from Umicore Electroplating is a cost-effective and high-grade alternative to pure rhodium coatings (see pages 8 and 9). Users of rhodium coatings can employ the Rhoduna® Alloy electrolyte calculator to quickly and easily work out what savings they can make by changing over to Umicore Electroplating’s new Rhoduna® Alloy. They need only enter their annual rhodium consumption, and then the calculator will automatically work out the potential savings.

The new Umicore app is now available for free download to all users with the iPhone and Android operating systems. BlackBerry users can also take advantage of this new information tool.

The Umicore app is available in both German and English.



The Umicore app provides a rapid overview of the latest precious metal prices.

IMPRINT

Published by: Umicore Galvanotechnik GmbH, Klarenbergstraße 53–79, D-73525 Schwäbisch Gmünd

Editorial responsibility: Karin Barth

Design and layout: Eberle GmbH Werbeagentur GWA, Schwäbisch Gmünd

Text: ecomBETZ PR GmbH, Schwäbisch Gmünd

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Goldpost is available and can be downloaded as a pdf file from the Internet in German and English at www.UMICORE-galvano.com.



The world of noble and functional surfaces

The new appearance of Umicore Electroplating

Many changes have been happening at Umicore Electroplating over the recent months. A new slogan has just been added to the logo, placing Umicore Electroplating unequivocally in the world of noble and functional surfaces. The accompanying image campaign for the company and the individual product ranges further underline this claim.

The repositioned logo and slogan

Since June 2010, the Electroplating division has been a separate business unit within the Umicore Group. As a consequence, the Umicore Electroplating logo has since been appearing without the word “Jewellery”. The new logo is accompanied by the concise slogan “The world of noble and functional surfaces”, clearly identifying Umicore Electroplating as experts for high-quality surfaces in the decorative and technical sectors. In German-speaking countries, the German ver-

sion of the slogan is being used: “Die Welt der edlen und funktionellen Oberflächen”. The logo and slogan are linked on a coloured area divided

in two sections: The new slogan is found on the blue area on the left. As laid out by the group’s corporate design, the logo with the name of the

The new slogan added to the logo: “The world of noble and functional surfaces”. This clearly identifies Umicore Electroplating as expert in high-quality surfaces.

The world of noble
and functional surfaces



business unit – “Electroplating” – appears on a white background. This side-by-side pattern also occurs in the image advertisements for the Umicore Electroplating product ranges.

The guiding theme

Umicore Electroplating is an expert for perfect surfaces. All electroplating solutions, regardless of whether they are used in the decorative or in the functional sector, produce surfaces that fully meet the demands of the respective field of application.

“Perfect surfaces are our passion” – this statement forms an integral part of the “reflection” image. The perfect reflection in the surface of the water symbolises Umicore Electroplating’s passion for faultless surfaces.



Similar perfection is only found in nature. For this reason, the key picture of the new Umicore image motif is the perfect reflection in a water surface. Reality and its reflection can hardly be distinguished from each other in

this motif – something that is only possible with an absolutely perfect surface. Umicore Electroplating displays this perfect, mirror-like surface with a variety of images: from an iceberg to an impressive mountain scene.



For her it's a simple chip.

For us it's a **functional surface.**

The main purpose of surface coatings is to aesthetically and functionally improve the surfaces to which they are applied. Umicore Electroplating is a global leader in the production of electrolytes used to refine surfaces. Whether it is jewellery, automobile or communication technology – the world of noble and functional surfaces offers endless possibilities.

www.umicore-galvano.com

The world of noble and functional surfaces

umicore Electroplating

Motifs for the product ranges

Umicore Electroplating has developed a practice-oriented and application-specific image campaign for each of the company's product ranges. In a number of side-by-side motifs, an everyday world is shown in which people are displayed with a product. The functionality and appearance of these products are directly linked to electrolytes or anodes from Umicore Electroplating. On the left-hand side of the images, a concise sentence describes the function of the product in the everyday world, such as "For him it's his favourite pen", "For her it's a simple chip". On the right-hand side, the viewer is shown the relevance this everyday object has for Umicore Electroplating: "For us it's a noble surface", "For us it's a functional

surface". Several images have been developed for each product division (Decorative Precious Metals, Technical Precious Metals, Non-Precious Metals and Electrocatalytic Electrodes) that can be adapted as images at trade shows and in advertising.



For him it's his favourite pen.

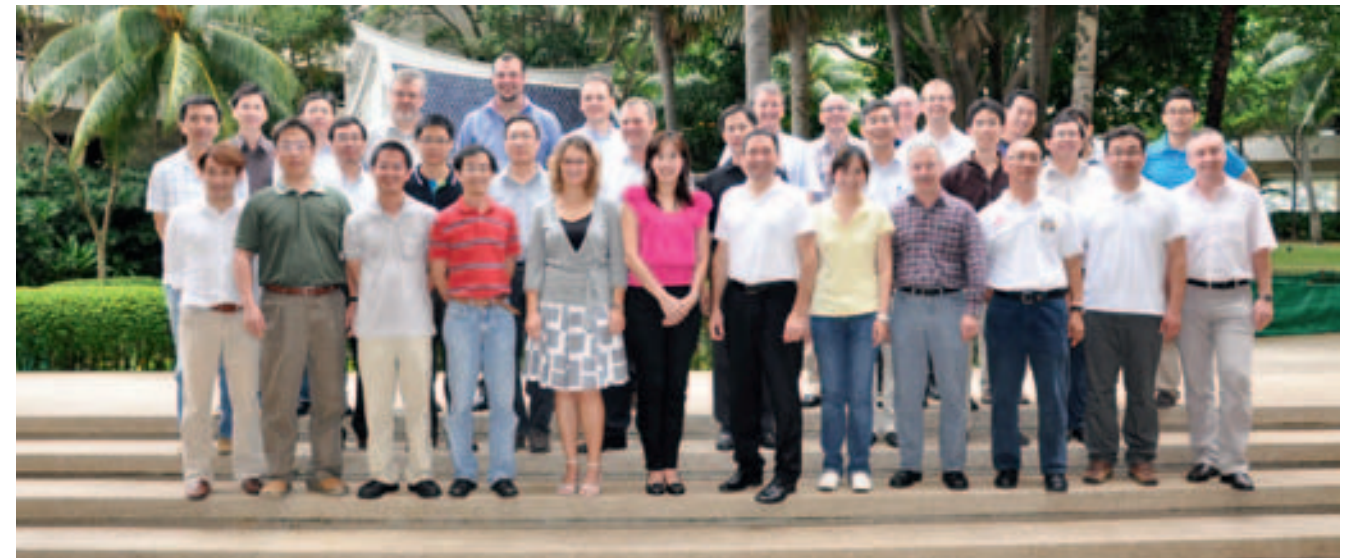
For us it's a **noble surface.**

The main purpose of surface coatings is to aesthetically and functionally improve the surfaces to which they are applied. Umicore Electroplating is a global leader in the production of electrolytes used to refine surfaces. Whether it is jewellery, automobile or communication technology – the world of noble and functional surfaces offers endless possibilities.

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The world of noble and functional surfaces

umicore Electroplating



All the participants at the 2010 Umicore Far East Meeting.

Umicore Far East Meeting 2010

Exchanging experience and team building in Thailand

Umicore Electroplating's Far East Meeting, held every two years, is a platform for training and for exchanging experience in equal measure, as well as an opportunity for people to get to know each other. Thirty-five employees from nine different countries met in Phuket, Thailand from 6 to 10 November 2010. They heard the latest news on current products and on the development processes within the group. They were also able to make new contacts and broaden existing ones.

Opening the meeting, Thomas Engert, Managing Director of Umicore Galvanotechnik GmbH, provided

an overview of the company's "Vision 2015" and informed about planned marketing activities and projects at

Umicore Electroplating's various international representatives.

Two days were taken up by a number of workshops from the "Decorative Precious Metal", "Technical Precious Metals", "Non-Precious Metal", "Printed Circuit Boards", and "Electrocatalytic Electrodes" business divisions. Staff from the Umicore Electroplating headquarters in Schwaebisch Gmuend, Germany, also gave presentations on new products, research work and progress in product development. There was a choice between workshops with general issues related to all divisions, as well as special application-oriented topics such as "PCB Electroplating", "LED Leadframe Plating", "Connectors – Hardgold and Pd/Ni", "Zippers + Buttons and RF-Connectors" or "Plating on Plastic".

In the first afternoon, participants had the chance to get to know each other better through a variety of joint team-building tasks, and learned how to overcome obstacles in groups through interactive role play.

Team-building at the Far East Meeting:

Together, participants tried to overcome obstacles in a playful way.



Ruthuna 490


Low corrosion black ruthenium electrolyte

The new Ruthuna 490 black ruthenium electrolyte from Umicore Electroplating has two essential advantages: On the one hand, it can be directly deposited on layers of bronze or nickel. This means that no intermediate layers of expensive palladium or gold are needed, leading to enormous cost savings.

On the other hand, the ruthenium layer shows a high abrasion resistance, which is a particular advantage in the clothing trade with its tight restrictions on nickel and cobalt: With baby clothes, for example, only 1 mg of nickel or cobalt is permitted per kilogram of product. Nevertheless, in the clothing industry, grey or black coatings on buttons, buckles and rivets are usually produced from cobalt-tin electrolytes. To ensure that the strict, critical values of cobalt or nickel are maintained, the coatings have to be given a lacquer finish that acts as a seal.

Suited for rack and barrel plating

Thanks to its high abrasion resistance, Ruthuna 490 is suitable for use without any subsequent lacquer coating, cutting the number of process steps. In addition, the new black ruthenium electrolyte is suitable for both rack and barrel plating operations. Its positive features make themselves apparent even at a low ruthenium concentration of just 2 g Ru/l.

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Dark coatings, such as on these press-buttons for the clothing industry, are possible with Ruthuna 490 without using any lacquer coating.



Rhoduna® Alloy

The Queen of noble surfaces

With its new Rhoduna® Alloy electrolyte, Umicore Electroplating has launched the world's first galvanic rhodium alloy on the market. This unique surface coating for decorative applications is as white as pure rhodium, while even smoother and more resistant to abrasion. At the same time, the "White Queen" is far less expensive than layers of pure rhodium.

In 2008, as the price of rhodium escalated to record-breaking heights, Umicore Electroplating began to look for an alternative to pure rhodium electrolytes. The result was Rhoduna® Alloy – a rhodium alloy bath that has all the quality characteristics of high-grade rhodium coating, and yet which also offers a price benefit: As an alloy, the new electrolyte – depending on the latest rhodium and ruthenium price – is up to 20 percent cheaper than a pure rhodium electrolyte.

The basic materials of the new coating are truly majestic: a mixture of rhodium, the most valuable precious metal in the world, and the platinum group metal ruthenium. Through targeted research and development work, Umicore Electroplating has succeeded in achieving a brightness with Rhoduna® Alloy that is almost identical to that of a pure rhodium layer.

In the wear test, Rhoduna® Alloy also displays surprisingly clear advantages over a conventional rhodium coating. With an abrasion rate of 0.35 µm per 1,000 strokes, the "White Queen" performs far better than pure rhodium layers (1.6 µm per 1,000 strokes). The improved throwing power also allows complex forms to be evenly coated.

The "White Queen" is the image of Rhoduna® Alloy, advertising the new rhodium alloy electrolyte in product brochures and on the Internet. On the website specially designed for Rhoduna® Alloy – www.rhoduna.com – users can obtain detailed information on the electrolyte and can employ a calculator to work out their possible savings compared to the use of pure rhodium electrolytes.

The "White Queen" is the symbol of Rhoduna® Alloy. It represents the new electrolyte's bright white colour.

Internet users can find detailed information on Rhoduna® Alloy on the www.rhoduna.com website.



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Dornbracht and Umicore: Partners since 1986

Pioneer in premium bathroom fittings

Almost exactly 60 years ago, Aloys F. Dornbracht and his son Helmut revolutionized the fitting market with a unique product: a retractable spout, through which the water could be directed to exactly where it was needed. Today, the internationally active company is recognised for sophisticated and especially individual fittings at the top end of the market.

Design and individuality have a high priority at Dornbracht. Moreover, the family firm is one of the few companies that produce entirely in Germany. Dornbracht also relies on a regional network: 90% of suppliers are from within Germany with as many as 70% from the South Westphalia region.

One of the company's recipes for success is its readiness to swim against the tide, even where new products are concerned. In 1992 for example, it launched the "Tara" – a minimalistic fitting from Sieger Design with clear lines: precise, simple and elegant. As a two-handed unit, it was out of step with the trend of the times, as the market was clearly dominated by the single lever mixer tap. Yet the progressive "Tara" concept is now regarded as the archetype of modern bath fittings,



The Tara.Logic vanity unit is based on the classic "Tara" design.

and as such it has been awarded numerous international design prizes worldwide and is often copied. "Tara" is one of the most successful Dornbracht models and has strengthened the company's reputation as a pioneering manufacturer of high quality

fittings and accessories for both bathrooms and kitchens.

Design – not standard

Dornbracht was already an advanced company back in 1981, when an ultra-modern electroplating plant was installed in the company, to enable the firm to react even more quickly to trends and requests for new colours. Dornbracht's production had always largely been focused on the area of design and luxury fittings. This ensured its market leadership: In the early nineties, the company's turnover had already reached DM 84.9 m. The standard range had, at that time, almost entirely disappeared from the range of products, and the change-over to the manufacturer of premium fittings was complete.

Today the family business is run by Andreas and Matthias Dornbracht, sons of company founder Helmut Dornbracht. They have further expanded the company's image as a specialist in high-quality bathroom and kitchen fittings.

Dornbracht uses a state-of-the-art Gavaroline to coat its fittings. Every Gavaroline consists of three modules, with two robots active on each.





With Dornbracht fittings, the focus is on individuality and design. Left: Bath with fittings from the “Supernova” range. Right: The new “Champagne” surface is supplied by Umicore Electroplating.



Dornbracht has been working closely with Umicore Electroplating since the mid-1980s. The wide assortment of coloured surfaces in the range of fittings can be traced back to the cooperation between the two companies – Umicore Electroplating supplies

Senior Helmut Dornbracht (in the middle) together with his sons Matthias and Andreas Dornbracht.



the fittings specialist with three gold, one platinum and one palladium electrolyte.

Umicore: Partner for sophisticated surfaces

Above all, the major challenge is the constant contact with water that the taps and fittings are exposed to in bathrooms and kitchens. Fittings in the bathroom and kitchen also have to be especially scratch-resistant and colour-stable in order to retain their shiny appearance for as long as possible. Umicore Electroplating has been involved in a variety of processes to improve the surfaces of Dornbracht fittings. One example is the development of a palladium-nickel intermediate layer, which Umicore Electroplating began tests on in 2002. “The aim was to improve the nickel-plated, gold-plated or platinum-plated brass coating system, which was susceptible to corrosion,” explained Norbert Hunke from

the Technical Services at Umicore Electroplating. “The successful tests were able to convince Dornbracht. The new coating has been employed in the company’s automatic precious metal plant since 2003.”

In 2009, when Dornbracht was introducing a new surface for the “Supernova” product, Umicore Electroplating was involved in its development. “The electrolyte concerned, our Auruna® 241, with a pale, greyish-yellow colour, is very similar to that of sparkling wine”, explained Norbert Hunke. The advantages of the new surface, available from Dornbracht under the name “Champagne”, are its great hardness and scratch resistance.

Back to a good position after a major fire

Dornbracht suffered near devastation in July 2009, when almost the entire plating department and the

Aloys F. Dornbracht GmbH & Co. KG

Founded: 1950 in Iserlohn
Employees: 790 (2009)
Products: Designer fittings and accessories for bathrooms and kitchens
Production site: Iserlohn, Germany

**DORN
BRACHT**

warehouse for semi-finished products were destroyed by a fire caused by a series of explosions at a nearby chemical plant. But instead of being filled with resignation, Andreas and Matthias Dornbracht used it as a reason to put the company in an even better position by installing highly modern, modular production lines: Instead of following the standard industry practice, and having a large central rack plating system, the alternative chosen in 2010

was to use smaller, highly flexible units. In addition to the previously very successfully working electroplating robots, the Gavaros, two new production lines are now employed at the Iserlohn production site: two Gavarolines and two Variolines. The modular design of these four lines in a newly constructed multi-purpose hall gives Dornbracht unprecedented flexibility in the use of innovative technologies. One-offs, special designs and very small series are given their finishing touches on the Flexline – a new manual electroplating system.

These new lines are article-specific systems. The company therefore continues to follow its guiding principle, says Managing Director Matthias Dornbracht, so that all manufacturing and organisational units are subordinated to the requirements of design: “No radius and no edge is going to be altered only to manufacture a few more components per time interval.”

Extending the HTE range

New ribbon plating line

In July 2010, Umicore Electroplating put a new high-temperature electrolysis (HTE) ribbon plating line into operation. It is equipped with the latest control and reeling systems and enables ribbon widths of up to 5 mm to be coated.

On the continuous production machine, the thin molybdenum ribbons are coated with ultra-pure platinum. The ribbons are coated using high temperature electrolysis. In this process, highly ductile platinum layers are generated with a high adhesive strength and corrosion resistance on every refractory base material. The platinum-coated molybdenum ribbons are primarily used as a high-temperature and oxidation-resistant contact material in the lighting industry.



Umicore Electroplating's new ribbon plating line.

Apart from molybdenum, other refractory metals such as tungsten, titanium and tantalum, as well as high-alloy steel ribbons can also be coated with platinum.

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Umicore Electroplating supports knowledge transfers

Model employer and partner in education

As an outstanding provider of know-how in the field of surface technology, Umicore Electroplating has excellent links to the industry's educational and research institutions. Both employees and customers benefit from this.

Umicore Electroplating's location in Schwaebisch Gmuend represents a key advantage for the continuous transfer of knowledge within the enterprise: It features a variety of facilities that offer unique expertise in the surface technology field. These include the European Academy of Surface Technology (EAST), the Research Institute for Precious Metals and Metals Chemistry (fem), and the Zentrum für Oberflächentechnik (Z.O.G. – Centre for Surface Technology) in Schwaebisch Gmuend. Umicore Electroplating cooperates closely with Z.O.G. and offers a number of workshops in the field of coating technology in the context of the Z.O.G. programme of seminars. The Surface Technology Network of the East Wuerttemberg region (NORO), to which Umicore Electroplating also belongs, is another example of the continuous exchange of experience.

Umicore Electroplating has also maintained a training partnership with educational institutions in the region: Company staff bring school students face-to-face with recognised

trades in the surface treatment field, and give them access to the operational procedures in an industrial company.

Umicore Electroplating benefits in a special way from its collaboration with the nearby Aalen University: This educational institution is one of the few universities in Germany to offer studies in surface and materials science. As a result, many students are already being supported by Umicore

Electroplating during their studies, whether through internships, or via semester projects and graduate work in the company. Employees of Umicore Electroplating are also welcome speakers at the university, and can provide a valuable insight into the practice of surface technology.

Umicore Electroplating sponsors both its own employees and young talents. For instance, all employees have had the opportunity to participate in the company's "Business English" internal training programme, for years. If employees attend a job-related evening class, they are also supported by the company.

Internal and external training measures play a key role at Umicore Electroplating.



3rd Umicore Run in October 2010

"Running together encourages team spirit"

Since 2008, Umicore Electroplating has been sponsoring the Umicore run, which takes place every year in the context of the Sparkassen Alb Marathon in Schwaebisch Gmuend. In October, 183 competitors, including 14 Umicore runners, took part on the 10-km course.

Thomas Engert, Managing Director of Umicore Electroplating, also took part and was pleased by the active involvement of his employees: "Running together encourages team spirit, both in private and professional life." After crossing the line, all the runners agreed to take part again in next year's event.



Fourteen Umicore runners took part in the third Umicore run in Schwaebisch Gmuend.

Umicore Electroplating at trade fairs



Umicore Electroplating took part in the HKPCA Show in China with a new, innovative stand design.

finishing field at a new booth. Main focus: Rhoduna® Alloy.

4 – 8 April 2011: Hannover Messe, Germany

Umicore Electroplating will be represented at the stand of the ZVO (Zentralverband Oberflächentechnik – Central Association of Surface Technology), Stand D40 in Hall 6. The Hannover Messe is the world's largest showcase for pioneering technologies.

18 – 21 April 2011: KPCA Show 2011, Korea

At the KPCA Show, Core PMG will be presenting Umicore Electroplating products for the PCB industry, such as the ammonium and chloride-free palladium-nickel electrolyte.

11 – 13 May 2011: Suzhou PCB Show 2011, China


Umicore Electroplating's partner New Ages Corporation will be providing information on products for the printed circuit board industry at the Suzhou PCB Show.

13 – 15 March 2011: MJSA Expo, New York, USA

US partner Gesswein will be presenting Umicore Electroplating products at the largest U.S. jewellery fair.

24 – 31 March 2011: Baselworld 2011, Switzerland

At BASELWORLD 2011 (Hall of Innovations 3.U, Stand E60) Umicore Electroplating will be exhibiting electrolytes from the decorative



Perfect surfaces
are our passion.

Lake Matheson in New Zealand has a perfect surface. It reflects the nature and the mountains, one to one. Nature's perfection is the model for our surfaces.

Umicore Electroplating is a global leader in the production of electrolytes and anodes used to ennoble surfaces. Whether it is jewellery, automobile or communication technology – the world of noble and functional surfaces offers endless possibilities.

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