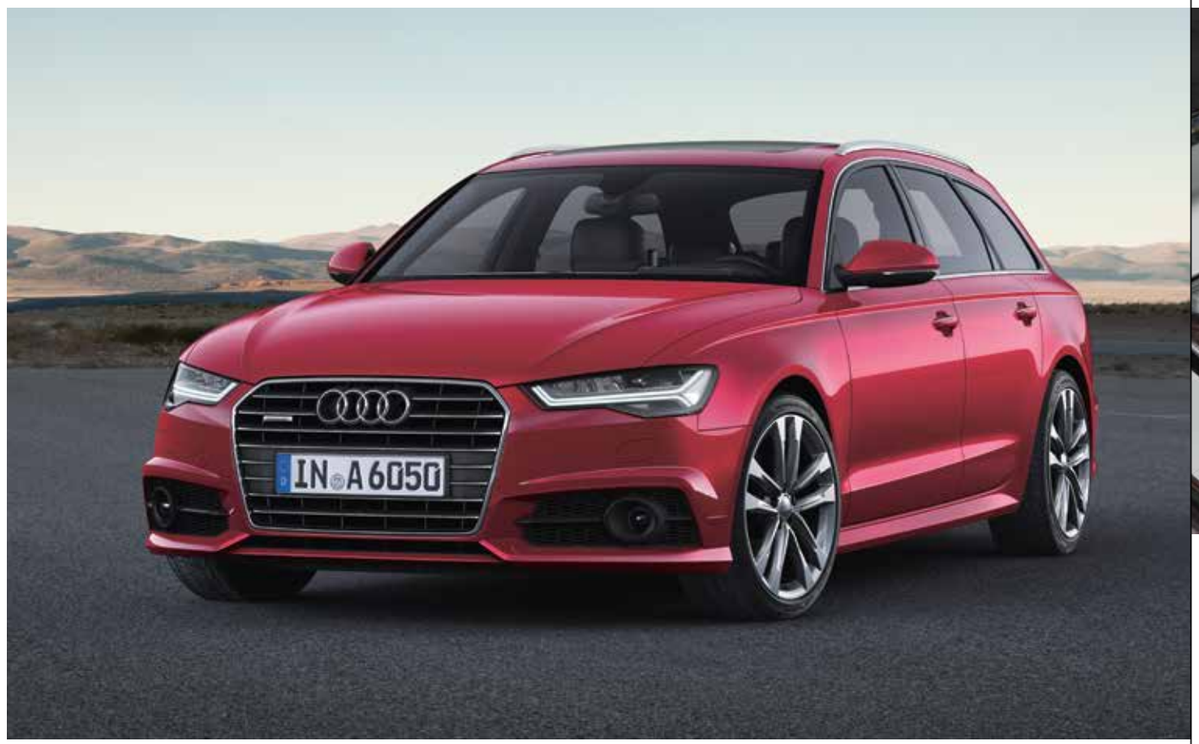
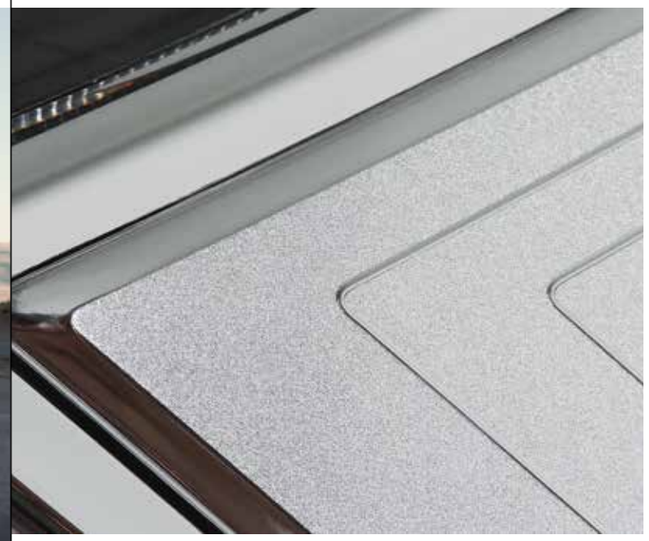




⊖ⓘ Attention to detail: design contours on the Audi A6's headlamp are emphasised by lines that are embedded in a finely lasered structure.

ⓘ Inspired by Mother Nature: the idea for structures can come from all sorts of sources.

FINISHING TOUCHES

Impressive surfaces: customisation is set to be one of the next big things in surface design. Eschmann Textures offers a diverse range of technologies to make objects look smart and feel good as well.

In many languages, the expression "It feels good" equally means something feels right. Olaf Hartmann, an expert on haptics and founder of the Multisense Institut, the first consultancy specialising in multisensory marketing in Germany, knows why: "The sense of touch is the first one that develops while we're still in our mother's womb. At the same time, it's the last remaining one when we draw our last breath. Therefore, touch is synonymous with life and vital to our understanding of the world and relationships."

Feeling means believing

Touch is how we work out whether something's true or not: we often use touch to check whether something we've seen or heard is correct. "Other senses are fuzzier, or in other words less precise," is how Olaf Hartmann explains this phenomenon. The sense of touch perceives irregularities and limitations that wouldn't be visible to the naked eye unless they were magnified fiftyfold. An object might appear to be made of metal, for instance, but we're only really sure if we touch it. This experience has also become part of the language: while we can misjudge what we see or mishear something, we can't mis-touch anything; and verbs such as to grasp are always linked to a meta level of understanding. "You could say that our sense of touch is our way of checking whether the other senses – which we often deploy at an earlier point – have delivered the right impressions." These processes are subconscious but have an enormous impact on the decisions we make. When one sense validates another, things appear to be authentic and pleasant. Positive confirmation of something we've perceived by another sense serves to magnify the impact. Even though we might not be aware of it, haptics influence the quality we recognise in an object and its usage and therefore have a knock-on effect. Because if something feels good, we believe it's good quality too.

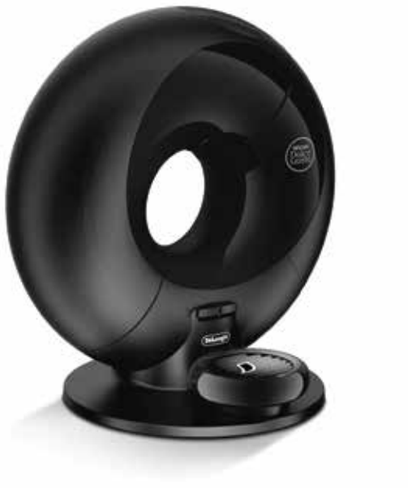
Keeping what we touch

Product designers can harness these multisensory relationships because haptics produce several other effects that have a lasting influence on purchasing behaviour. "I want to keep anything I touch because it's precious to me. Mentally, I'm already taking possession of things I touch, which increases their subjective value," comments haptics specialist Hartmann. The longer we hold something in our hands the more valuable it appears to us. As Olaf Hartmann explains: "That's what we call the endowment effect. Which is why, for example, it's important that products make us want to touch them at the point of sale. This concept has been pulled off in Apple stores to a T: all devices are presented on tables and without any glass separating them and the consumer. Apple was also a multisensory pioneer when it comes to product design: one of the things the iPhone has taught us is to stroke our phone. This changes our relationship with the object profoundly."

Nestlé uses surfaces to enhance products

So haptics can play an important role in product design too: they can improve functionality but also boost brand credibility and appreciation and awaken desires. Food company Nestlé deliberately used these effects in the design of its Nescafé Dolce Gusto Movenza and Eclipse coffee makers: "Regardless of whether consumers are aware of it or not, haptics play a pivotal role in how they judge a product and decide whether they like it or not. Users mostly notice surfaces of inferior quality immediately," says Vincent Rognon, Nestlé's research and development specialist. The developers in Switzerland factor haptics in to the entire design process. "It starts at the design selection phase

when the marketing team, engineers and designers are all involved in the decision-making process," reports Vincent Rognon. "When the project moves on to the industrial rollout phase and then into production, the project team makes sure that the surfaces are meticulously crafted." Special brush effects were used on the Movenza and Eclipse coffee makers to lend them an exclusive look and feel.

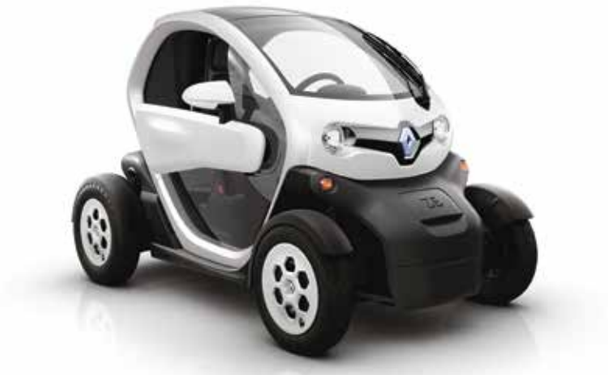


ⓘ The fine brush strokes don't just make the Nescafé Dolce Gusto Eclipse *look* classy, they change the coffee maker's haptics as well.

Endless options thanks to lasers

This high-end surface is produced with Eschmann Textures' LaserTec technology, which works in the following way: a laser applies textures to the surface of the plastic mould. A laser beam removes material from the surface of the moulding tool layer by layer, thereby gradually creating structures. This modern texturing process enables virtually any shape imaginable. The spectrum ranges from complex architectural and geometric patterns to textile effects or the imitation of natural forms.

"LaserTec taps into endless options in terms of design, depth and contrast," confirms Vincent Rognon. "The only limitation lies in the creativity of the engineers and designers, not in the technology." The Movenza and Eclipse designer coffee makers were so popular with customers that the process has passed muster for future projects too.



ⓘ All plastic surfaces on the interior and exterior of the Renault Twizy are enhanced with Eschmann Textures technologies.

Three dimensions and 3D printing possible

Apart from the brushstrokes used on Nescafé's coffee makers, it's also possible to create textile effects, leather textures or geometrical pyramid patterns. All textures are digitised and can be reproduced at any time. It makes no difference to the process whether the original idea came from moulding a natural form or from a digital construction. Structures can be shown in a three-dimensional way as early as the design phase and therefore support the creative process. 3D printers can make prototypes to illustrate the result and reveal what the product feels like – after all, the experience of touching the product is just as important as the visual one.

Eschmann Textures uses cutting-edge five-axis lasers to make these high-precision surfaces. A new laser centre was built at the Gummersbach site at the end of 2017. As the fast pace of development in laser technology is constantly opening up new opportunities, a new large-scale laser will be installed there in the second quarter of 2018. As a result, Eschmann Textures is constantly expanding its portfolio so that it can offer this advanced technology for high-end surface decor the world over. But laser technology isn't the only method used: the combination with etching technology is also extremely practical in many applications.

"Other senses are fuzzier, or in other words less precise than touch."

Olaf Hartmann,
founder of the Multisense Institut

"We believe that customisation will be one of the next big things in surface design."

Jochen Liebe,
sales director at Eschmann Textures

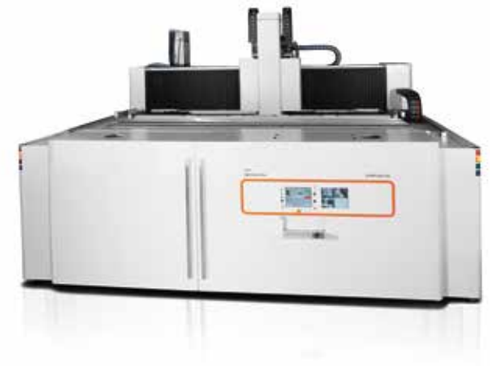
The automotive industry is leading the way, others are following

The automotive industry is the main customer for these technologies. As a ground-breaking industry, it's recognised the benefits of multisensory design and set up sensory labs where everything's carefully considered, from a button's pressure resistance to the sound of a windscreen wiper.

"In that industry, nothing is left to chance," says Jochen Liebe, sales director at Eschmann Textures. "A great deal of thought goes into selecting the surfaces in a car and they're all custom made. But other industries are also following suit: we also have an increasing number of customers who want to enhance the plastic surfaces of consumer goods, furniture or household appliances."

There's even an eyewear manufacturer among them who is embracing the opportunity to customise surfaces with another of the technologies that Eschmann Textures offers. "We believe that customisation will be one of the next big things in surface design. Individual parts and small batches with personalised texturing will come," says Jochen Liebe.

Eschmann Textures works on these solutions for the future as a subsidiary of voestalpine High Performance Metals GmbH. Its development team is focusing on a mix of various technologies that complement each other in a meaningful way. According to Liebe: "It's an exciting challenge that we enjoy responding to each and every day."



ⓘ At the new laser centre in Gummersbach, Eschmann Textures is investing in the future in the interests of perfect plastic surfaces. Shown here: the new Laser 4000 from GF Machining Solutions.

ESCHMANN TEXTURES