

# sagentia

## Power into beauty: how skincare companies can find new success with energetic devices

Through our work, insight and conversations we understand better than most the uses, challenges and opportunities novel energies have for this sector.

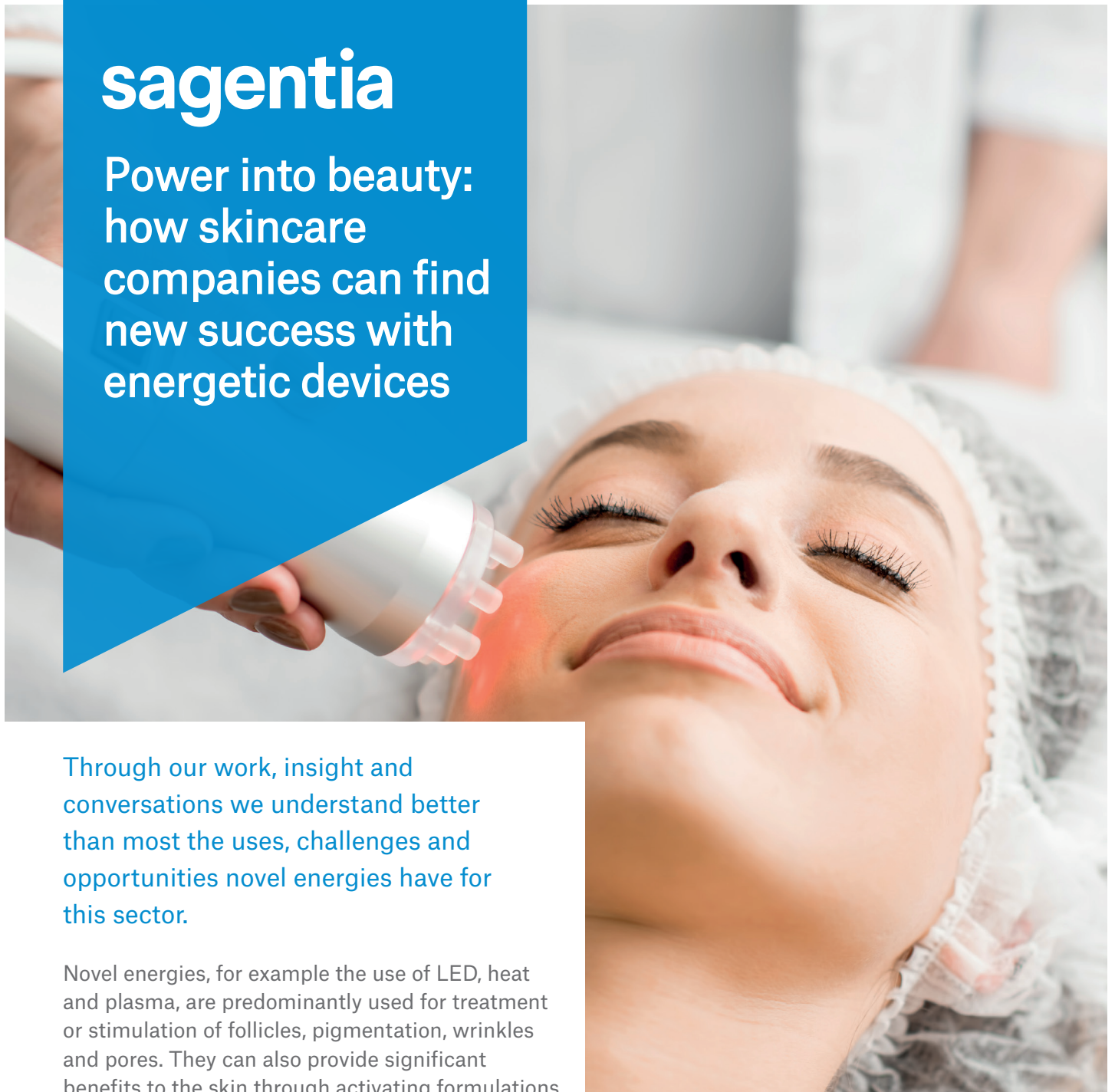
Novel energies, for example the use of LED, heat and plasma, are predominantly used for treatment or stimulation of follicles, pigmentation, wrinkles and pores. They can also provide significant benefits to the skin through activating formulations to drive true and tangible benefits.

With wrinkles, for example, some devices deliver heat applied to the skin and others use pulse and energy characteristics – therefore avoiding heating – to create a localised plasma to disrupt the collagen and encourage new cell growth. While the disruption is done through devices the subsequent cell growth is entirely natural, encouraging the body to do its own thing.

In reality, this heating and disruption is the only true way to create collagen thereby plumping the skin and reducing wrinkles. So, while other claims to ‘reduce the appearance’ of wrinkles, they achieve this by temporarily ‘filling’: a positive effect none-the-less but not a long-term one.

Technologies to achieve this already exist but because the procedure changes the physiological structure of the deeper levels of skin, regulations mean it can only be carried out by professionals such as in clinics or by a dermatologist.

Another example can also be applied to follicles where Intense Pulse Light (IPL) is often used, but again, the balance between disrupt and damage must be finely tuned. Because it is based on generating heat, the temperature has to be exact: warm enough to stimulate growth but not so hot it destroys the follicle and slows – or stops – growth. It goes even further when an understanding of physiology shows that getting the ‘right’ level



of heat will vary from person to person: the heat required for growth, not damage, is unique to that individual. Because of this, and the fact that the tolerances and variability are so tiny, this type of procedure has to be left to the professionals and the devices of this specificity cannot safely be recommended for a wider consumer mass-market.



However, even professionals will benefit from sensors to inform them of the effect created as they work. Currently these techniques will remain in the professional arena until sufficient research establishes a complete set of parameter ranges for all skin types. A longer-term vision might be to put such sensors into control loops to automatically set the delivered energy levels, and probably more crucially, the rate of energy delivery, or power. An example of the pulsed laser/collagen interaction is that the tissue emits light from an incident infra-red pulse. This, so-called frequency-doubling intensity both shows the location of the effect (if a suitable imaging system is used) and the degree of the interaction.

Could there ever be home devices which use the same technologies and create matching results as these specialist devices?

While the science is well-established, the challenge for designers and manufacturers would be how to replicate these results, underpin them with real and demonstrable science, and develop devices that were safe and could confidently be operated by consumers.

A device with a high price point is likely only really accessible to those with more disposable income, and will face competition, not only from other devices but from an experience in spas and salons.

While the safety of using novel energies in personal care and beauty consumer devices is a key challenge, so is understanding the fundamental physiology. For many new and emerging technologies, the link between energy and effect on the body is not well defined and may require expensive and time consuming clinical trials to establish. This will be critical for the dual purpose of product development and optimisation, as well as to satisfy the requirements of regulators.

But what else for the future? These novel energy technologies have been used for many years and are seen in current devices, and this will continue. What we may see is that the delivery of personal care and beauty treatments that use them is a move into automation where consistency can be more accurately guaranteed.

Diagnostics, safety, investment in R&D and reducing the cost, and size, of novel energy devices for the mass market will all be drivers for brands and organisations either already playing – or looking to play – in this arena.

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