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**Spice Application Systems Ltd (SAS) is an international leader in the use of electrostatic technology to apply flavourings and coatings to foodstuffs and pharmaceuticals.**

With several hundred units already installed on food processing production lines around the world, its award-winning technology is ideal for use with a wide range of products, including snacks, confectionery, cheese products, breakfast cereals, frozen foods and dry pet food. It is also increasingly popular within the pharmaceutical sector, where it is used in tablet coating.

**Key benefits of using electrostatics include:**

- Achieves significant cost savings
- Delivers 100% accuracy of powder quantities
- Provides 98%+ coating of products
- Dramatically cuts powder wastage
- Increases energy efficiency
- Requires less downtime for cleaning and flavour changes
- Enhances product quality

Equipment can either be installed on new machinery or retrofitted to existing production lines, enabling manufacturers to take advantage of the latest technology without the need for major investment.

Based in Oxfordshire, England, SAS is led by Managing Director and company founder Peter King, who has more than 25 years' of experience working in electrostatics. With an in-house research and development programme, plus a team of engineers and worldwide distribution, SAS offers a cost-effective solution for all flavouring and coating requirements.



# Discover the best system for your needs



**Crisps, chips, extruded snacks, baked pasta shapes, rice cakes, pretzels, tortillas and other snacks**

Choose from:

Dry Vibrator: SAS 1 DV or SAS 2 DV

Oil Model Type: SAS 1 O

Slurry Model Type: SAS 1 S

Each model provides easy to change flavours and accurate application of quantities of salts and fats, something which is increasingly important for health-conscious producers. Especially ideal for fragile snacks and difficult shapes, as electrostatics offers a true wraparound effect.

**Breakfast cereals: including porridge oats, cornflakes, granolas and nutty or crunchy cereals**

Choose from:

Dry Vibrator: SAS 1 DV or SAS 2 DV

Oil Model Type: SAS 1 O

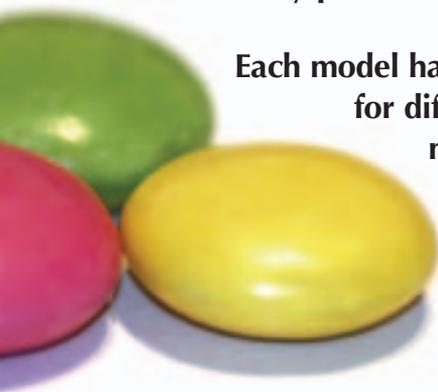
Different equipment options allow application of liquid and powder flavourings to best suit your needs.

**Cheese**

Dry Vibrator: SAS 1 DV or SAS 2 DV

SAS can now almost completely eradicate the perennial problem of starch powder dust on cheese processing lines by dramatically cutting the amount of powder in the air during the application process. Especially ideal for grated cheese products.

**Spice Application Systems** has a wide range of electrostatic equipment designed to suit a variety of different product types – from fragile pasta-baked snacks to chewing gums, processed meat to dry pet food.



Each model has specific advantages for different products, but no matter which one you choose, the benefits of SAS's advanced coating techniques will save money, provide a cleaner

working environment, improve efficiency and deliver enhanced product quality. In addition to the equipment listed here, we also have alternative equipment solutions, including our unique Wire Belt System and our Shaker System.

Read more here or visit our website to see which model provides the best answer to your product requirements and to see online videos of our equipment in action. If you would like to find out more or discuss new ideas, visit [www.spiceapplications.com](http://www.spiceapplications.com) or email us [info@spiceapplications.com](mailto:info@spiceapplications.com) and we will be in touch.

## Confectionery

Choose from:

Dry Vibrator: SAS 1 DV or SAS 2 DV

Oil Model Type: SAS 1 O

Dry Cone Model Type: SAS 1 C

Spraying electrostatically achieves a true wraparound effect on each sweet, with the different layers applied gradually to guarantee a consistent build-up of coating, totally smooth and free of lumps and cracks. Different powdered flavourings can be added as necessary and the system is already extensively used in the application of anti-sticking agents in chewing gum manufacture.

## French fries – chips

Choose from:

Dry Vibrator: SAS 1 DV or SAS 2 DV

Oil Model Type: SAS 1 O

Slurry Model Type: SAS 1 S

Electrostatics is very popular with potato processors who use electrostatics to apply stiffeners to frozen chips, dill and oil to pre-cooked potatoes.

## Nuts: including peanuts, cashew nuts and macadamias

Choose from:

Dry Vibrator: SAS 1 DV or SAS 2 DV

Oil Model Type: SAS 1 O

Slurry Model Type: SAS 1 S

Three different models offer a variety of options for both powder and liquid applications onto a range of nuts. Talk to us to find out which is best for your products.

## Processed meat

Oil Model Type: SAS 1 O

Perfect for adding flavourings to sliced meats, this model sprays flavours onto individual meat slices at the slicing stage, so as the meat goes straight into a sealed packet, the flavours stay fresh and consistent.

## Biscuits, snacks, cereals

Slurry Model type: SAS 1 S or SAS 2 S

Designed to atomise a slurry mix of dry spice and oil, it is perfect for applying liquid or powder flavourings to biscuits, snacks, cereals and similar products.

## Fresh meat, poultry and fish: including chicken nuggets, fish fingers, sausages and beefburgers

Dry Vibrator Model Type: SAS 1 DV

This model enables fresh meat and fish to be electrostatically coated with powder inside an enclosed chamber before moving onto the next stage, such as the addition of breadcrumbs, batters or other flavourings.

## Frozen vegetables and rice products

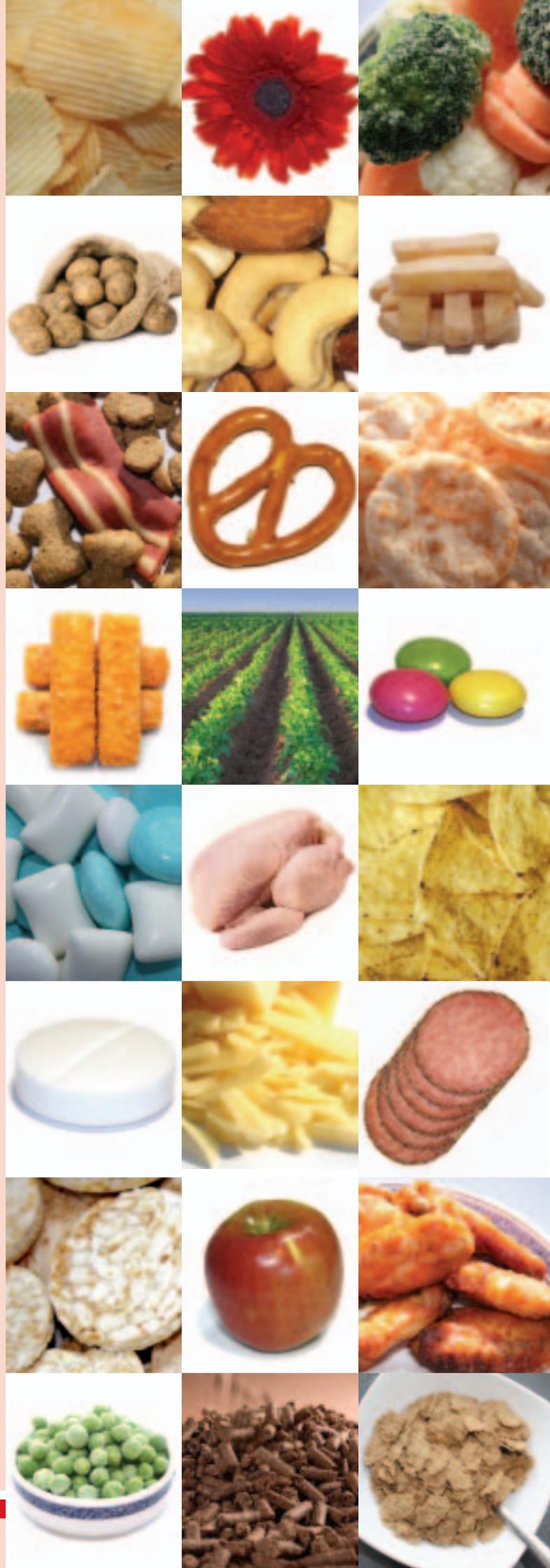
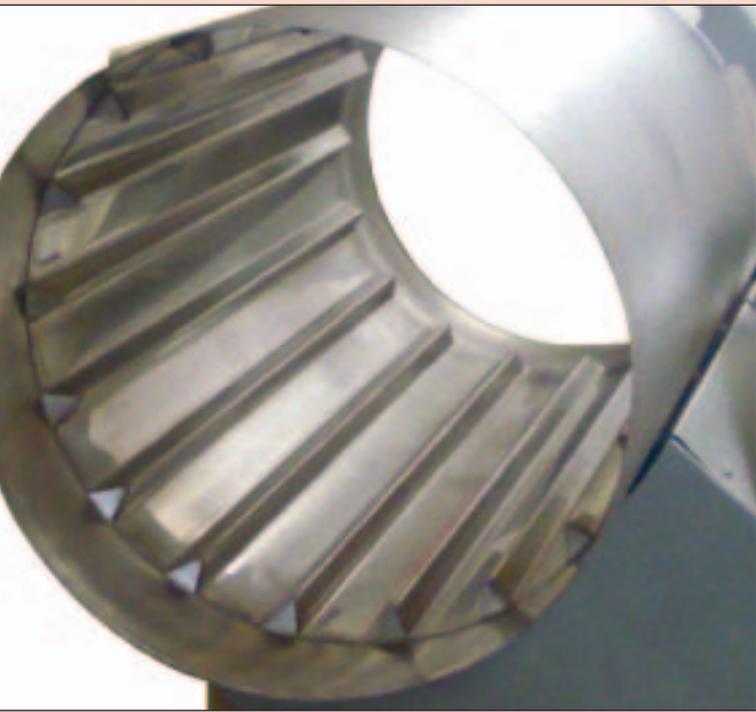
Choose from:

Dry Vibrator: SAS 1 DV or SAS 2 DV

Oil Model Type: SAS 1 O

Slurry Model Type: SAS 1 S

Electrostatics is ideal for applying powders and flavourings, for example garlic, to products such as frozen vegetables and rice.



## **Agriculture and horticulture: including apples, potatoes, seeds and animal feeds**

Choose from:  
Dry Vibrator: SAS 1 DV or SAS 2 DV  
Oil Model Type: SAS 1 O

Electrostatics is ideal for applying powders or liquids onto crops such as potatoes or apples to increase storage life, as well as for use with crops and animal feeds. It can also be used for the application of powder onto seeds to prolong germination periods.

## **Dry pet food**

Choose from:  
Dry Vibrator: SAS 1 DV or SAS 2 DV  
Oil Model Type: SAS 1 O  
Dry Cone Model Type: SAS 1 C

Electrostatics enables liquid and powder flavouring to be added efficiently to pet chews, biscuits and dry pellet foods, as well as enhancers to a range of dry pet foods.

## **Pharmaceuticals**

Choose from:  
Dry Vibrator: SAS 1 DV or SAS 2 DV  
Oil Model Type: SAS 1 O  
Dry Cone Model Type: SAS 1 C

Electrostatic processes work equally well within the pharmaceutical industry, where traditional tablet-making methods rely on a gradual build-up of powder applied to the tablet with a glueing agent. Our techniques enable the tablet to form in seconds, vastly speeding up the process, saving costs and ensuring a totally smooth coating.

# Harnessing the power of electrostatics

Electrostatic technology has been widely used in some manufacturing sectors for several decades, but its application within the food and pharmaceutical industries is a relatively new phenomenon.

SAS's electrostatic spray equipment is designed specifically to fill that gap and is most commonly used in powder, oil and slurry system applications.

Until recently, most manufacturers have applied flavourings and coatings to products in a large tumbling drum, but the method is largely inefficient because of poor coverage and high powder wastage.

SAS's solution resolves these problems thanks to its unique harnessing of the power of electrostatics, and its equipment can be retrofitted onto existing production lines.

The technique works by applying a static charge to the powder, oil or slurry as it is being sprayed onto the base product, such as snacks, chewing gum or tablets. As the flavourings and coatings become 'negatively' charged, they adhere automatically to the 'positive' base

product, creating a true wraparound effect.

The system provides pinpoint accuracy for applications and companies will see a return on investment within around four months in terms of savings alone – mainly through less wastage and greater energy efficiency.

The process dramatically cuts excess use of expensive powders, oil and slurry and vastly improves product coverage and consistency. In today's health-conscious environment, where levels of oils and fats need to be tightly controlled, the accuracy of the system ensures that manufacturers know exactly how much they are using.

Recently, SAS launched a new automated electrostatic control panel which can register and store precise air flow application figures for up to 100 different powders.

Powder contamination and misting on and around the production line is kept to an absolute minimum, resulting in a cleaner working environment for employees and less downtime for cleaning and flavour changes.

SAS's electrostatic equipment will work with all common types of pump and screw feeders, and products can be configured to apply both oil and dry spice simultaneously from the same control panel.

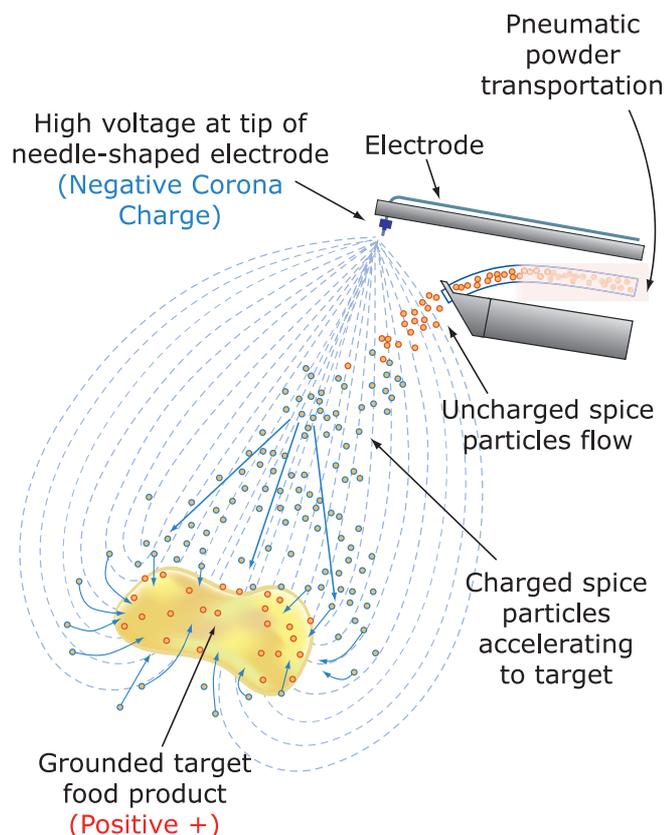
## The electrostatic process compared to other technologies

	Scarf Feeder	Paddle	Auger	Spinning Disc	Electrostatic
<b>Powder Saving</b>	10%	0%	0%	0%	<b>10–45%</b>
<b>% Coverage</b>	75%	75%	40%	40%	<b>100%</b>
<b>Drop Off</b>	60%	60%	65%	60%	<b>5%</b>
<b>Line Contamination</b>	75%	80%	70%	90%	<b>20%</b>
<b>Packer Contamination</b>	75%	80%	70%	90%	<b>20%</b>
<b>Drum Contamination</b>	60%	75%	75%	90%	<b>15%</b>
<b>Payback</b>	2 Years	2 Years	3 Years	2 Years	<b>3 months</b>

## How it works

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