

MOLECULAR MADNESS

Technology has permeated our offices, our downtime, even our bookshelves — now it's having a turn in the kitchen, as science takes gourmet to new levels.

SILICONE TUBES, pipettes, syringes, beakers and blowtorches are more often associated with science experiments rather than the culinary arts. But now that the science behind the art of cooking — known as molecular gastronomy — is under the microscope, such tools are becoming more commonplace in everyday kitchens. In addition to the use of high-tech gizmos and gadgets, amateur culinary alchemists are also learning the formulas to tweak familiar foodstuffs into everything from gels, jellies and jus to spheres, emulsions and foams. Here are a few gadgets and processes to help you cook like UK's Michelin-starred chef and host of *Heston's Feasts*, Heston Blumenthal at home.



SOUS-VIDE

Sous-vide is the French term for 'under vacuum' and is a cooking method that involves sealing raw ingredients in plastic and slow-cooking in a water bath — a style that dates back to the 1700s, and a favourite of acclaimed Spanish chef, Ferran Adrià (ex-El Bulli). Sydney food scientist and chef Galit Segev says as well as "ensuring ingredients retain their flavour and nutrients", the process changes the physics of cooking, rendering the food fall-apart tender. "When the core temperature of the meat is the same temperature as the water, it simply cannot overcook," she says. *From \$545; www.sousvidesupreme.com.au.*

SPHERIFICATION

This is another technique made popular by Blumenthal, who famously uses science to improve the taste of our food. His tomato water spheres with basil oil recipe involves the gelification of strained tomato liquid using sodium alginate (a natural gelling agent), which is then dripped into a calcium chloride bath to make spheres. "Sodium alginate molecules are like long chains. The calcium cross-links these chains and holds them together as a gel, which is a mesh-like structure," says Segev. One of Adrià's most famous dishes involved the gelification of apple juice to make apple juice caviar. *Molecular cuisine kits are available from \$79; www.sousvidesupreme.com.au.*

THE IMMERSION BLENDER

The immersion blender is another great gadget that has set the culinary world on fire. Again, the Messiah of molecular cooking, Adrià, first used this 1970s appliance to whip up foams using natural flavours such as fruit juice and stock, then adding an emulsifying agent such as lecithin to the mix. "Lecithin coats the surface of the air bubbles and stabilises them in the liquid. Then, when you mechanically incorporate air bubbles into the surface of the mixture, you create a stable foam that holds the flavour," Segev says. She advises home cooks to add one to six per cent soy lecithin in total to a liquid.

FLAVOUR COMPOUNDS

Chef Grant King uses innovative tools and techniques at his two-hatted restaurant in Sydney, Gastro Park (www.gastropark.com.au), and advises home cooks wanting to add drama to their next dinner party to experiment with combinations that have the same underlying flavour compounds. "It's not just flavours, it's textures and surprises. Although there are flavour marriages that seem odd, it's all about the balance," he says. While home cooks may not have the resources to replicate Blumenthal's dishes, King agrees they can achieve a 'wow' factor with a perfectly cooked fondant. "Ensuring a soft centre is simple: fill it with a frozen centre or cook it until the outside is spongy and the centre is still soft," he says.

