

# kitchen of the future

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Avant-garde chefs are plundering science labs and factories for new kinds of equipment—canisters of liquid nitrogen for flash freezing, centrifuges that spin food in test tubes at dizzying speeds to separate out the tastiest parts—all aimed at creating dishes with radically new flavors and textures.

*By Ratha Tep Photographs by Anthony Cotsifas*

## flash freezers

**Liquid chillers** To make orange ice cream, Ludovic Lefebvre of Los Angeles's Bastide purees orange pulp, then pours **liquid nitrogen** over it to freeze it instantly. "There are no eggs, no cream, no milk—just pure orange flavor," he says. Lefebvre also dips mayonnaise in liquid nitrogen (at a temperature of negative 320 degrees Fahrenheit) to form a cold, thin shell around a soft center, then serves it with fries, Belgian-style.

**High-tech iceboxes** Grant Achatz of Alinea in Chicago (an F&W Best New Chef 2002) is busy playing with a **cold plate**, a griddlelike contraption custom-built for him by Polyscience, an industrial equipment manufacturer. While regular freezers can maintain temperatures as low as negative five degrees Fahrenheit, the cold plate drops to 45 below zero. Achatz uses it to give dollops of sour cream a thin, frozen crust, which he tops with shavings of smoked salmon. Iacopo Falai of the restaurant Falai in New York City uses a \$30,000 Koma **industrial freezer**, which goes as low as negative 36 degrees Fahrenheit, to make layered mousses that freeze in 30 minutes instead of the usual 10 hours. The temperature is monitored by satellite, so it's extremely accurate.

## slow cookers

**Warm water baths** The sous-vide technique—which involves vacuum-sealing food in plastic before cooking it, often in water, very slowly at a very low temperature to keep it moist and tender—was pioneered in Europe. American chefs also have been adopting and improving the method using lab equipment like the **immersion circulator**—a small, motorized, whisklike device that evenly heats and moves the water. "Think of it as a hot tub," says Wylie Dufresne of New York City's WD-50 (an F&W Best New Chef 2001), who uses the immersion circulator to prepare about half the dishes on his menu, including pork belly that cooks at 140 to 150 degrees Fahrenheit for 24 hours and eggs slow-poached in a Parmesan cheese broth.

**Low-temp ovens** The **Hold-o-mat**, a Swiss oven that can be set at temperatures as low as 68 degrees Fahrenheit, is typically used in Europe to keep finished dishes warm. But Shea Gallante of Cru in New York City (an F&W Best New Chef 2005) cooks beef cheeks in it for 40 hours at just above 150 degrees Fahrenheit. The meat becomes exceptionally tender, but it doesn't fall apart the way it might if it were braised in a conventional oven.

## LIQUID NITROGEN

Ludovic Lefebvre of Los Angeles's Bastide pours liquid nitrogen—at a frigid 320 degrees below zero—over pureed orange pulp to make an intense, creamy ice cream.

