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The Journal

IL BARONE's Pizza e Pasta...

Celebrating Newport Beach new location

Newport Beach June 5, 2014; You could say that Il Barone just has the right recipe for success when it comes to preparing the finest Italian cuisine in Southern California. Il Barone is pleased to announce the opening of their second location in Newport Beach, a casual dining atmosphere retaining the same quality and flavors of their original restaurant.

Chef Franco Barone grew up in the restaurant business. He immediately developed a passion for cooking at a young age taking over his family's restaurant in Milan. In 1982, Franco and his family came to America to pursue his dream to become one of the greatest chef. Stints at several high profile Southern California Restaurants followed where he quickly gained recognition as one of Southern California's most talented chefs.

Franco and Donatella Baron

His many honors include twice being recognized as Southern California Chef of the Year; once by the Southern California Restaurant Writers Association and once by the Orange County Business Journal. He has also been named one of the great chefs of Orange County by the orange county kidney foundation. In February of 2010 Chef Franco and his wife Donatella realized there long awaited dream with the opening of Il Barone Ristorante. Chef Franco continues to dazzle and impress Southern California diners with impeccable quality and unsurpassed dishes that highlight his unique approach to traditional Italian Cuisine.
Zagat's report spells it out " Chef's specials alone are well worth the drive"...."lovely" ambiance; given the "warm, gracious hospitality" and "over-the-top" service, fans say it's "spot-on" when you're "celebrating."

Oscartek Rosa Display cases used in the new location

For more info please visit www.ilbaroneristorante.com

Could the green fridges of the future be magnetic?

June 12, 2014

A large, rotational magnetocaloric effect – which could be used as the basis for a low-temperature magnetic refrigeration device has been observed in crystals of the compound $HoMn_2O_5$, according to research carried out by scientists in Canada and Bulgaria.

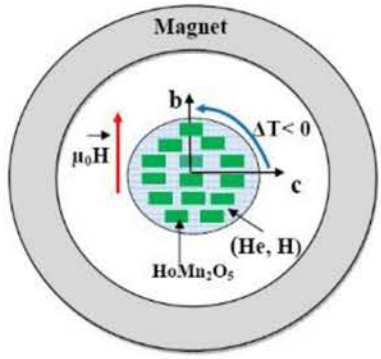
This finding expands our knowledge of magnetocaloric materials, adding to our progress towards a practical and environmentally friendly magnetic cooler that might be usable in a domestic setting.

Hot and cold

In recent times, the potential of magnetic refrigeration techniques as an alternative to traditional, vapour-compression solutions has been attracting considerable attention. This is mainly thanks to the lower energy demands of the technique, and the fact that it is not reliant on hazardous fluids. Such devices take advantage of the magnetocaloric effect – a phenomenon in which certain materials change temperature in response to an externally applied magnetic field. Such fields cause the magnetic dipoles of the atoms within magnetocaloric compounds to align.

To balance out this decrease in entropy – and thereby satisfy the second law of thermodynamics – the motion of the atoms also becomes more disordered, and the material heats up. In contrast,when the applied field is removed, the process reverses and the material cools. In magnetic refrigerators, these temperature changes can be harnessed, using a fluid or gas, to drive a heat pump.

The cooling potential of a magnetic refrigerator is proportional to both the size of the applied field and the magnetic moment of the active material being used. While alloys of gadolinium are conventionally associated with the magnetocaloric effect, materials with greater cooling potential are being actively sought. To this end, researchers from the Université de Sherbrooke in Canada and the Bulgarian Academy of Science set out to examine the magnetocaloric effect in the manganese compound $HoMn_2O_5$. This material is attractive both for its resistance to corrosion and for its insulating properties, which prevent energy losses from eddy currents induced by varying the applied magnetic field.



Rotated fields

While expecting to observe only the standard magnetocaloric effect in the compound, the researchers were surprised to discover that, at a temperature of 10 K, $HoMn_2O_5$ also exhibits a large magnetocaloric effect when simply rotated by 90° within a constant magnetic field. Such an effect is caused by the material experiencing a different magnetic response depending on its orientation. This makes the compound a candidate for use in a rotary magnetic cooler: an established variation of the standard magnetic refrigeration solution, in which repeated rotations of the active material are used to effect cooling. The researchers propose, for example, that their material might be employed to liquify hydrogen or helium for use as a heat-transfer fluid.

The advantage of the rotary approach comes from the simplification of the refrigeration device. "The magnetization–demagnetization process when using [the] standard magnetocaloric effect generally requires a large mechanical energy for moving the active material in and out of the magnetic field source," explains lead author Mohamed Balli, a physicist at the Université de Sherbrooke. In contrast, keeping the active material within the field leads to not only an improvement in efficiency, but also a more compact device. Additionally, Balli notes, "the implementation of such [an] effect allows the conception of rotary magnetic refrigerators working at high frequency, leading to a large cooling power".

Having demonstrated the potential of $HoMn_2O_5$ for application in rotary magnetic refrigerators, the researchers are now exploring the possibility of enhancing the cooling effect in the compound – along with seeking other materials with similar properties, especially those that might function at room temperature.

The research is described in Applied Physics Letters.

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