

Windshield Shade Solar Funnel Cooker

太阳能挡风幔漏斗灶具

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This document is published on The Solar Cooking Archive at

<http://solarcooking.org/plans/windshield-cooker.htm>.

For questions or comments, contact webmaster@solarcooking.org

This paper is presented as a community service to encourage and empower people to take steps to prepare for local emergencies and to protect the environment by using free and clean solar energy as an alternative to conventional cooking fuels. 本文作为社区的一项服务提供，鼓励大家在遇到本地紧急情况时使用免费的、清洁的太阳能替代常规的燃料，以保护环境

While experimenting with various designs of cookers over the past year to introduce in the indigenous communities where I live and work in southern Mexico, I hit upon an utterly simple way to make an instant portable solar oven. Taking a reflective accordion-folded car windshield shade, you can turn it into a version of the solar funnel, by simply sewing on little Velcro tabs along the long notched side. Here's how:

最近几年当我一直试用不同设计类型的炊具，介绍给我在墨西哥南部生活和工作的当地社区时，我找到了一种特别简单的方式，可以马上做一个速成型、可携带的太阳能炉具。你拿一块可反射的、叠成风琴式的汽车挡风幔，在有刻度的长幔一边缝上维卡依尼龙片，将其变成一个太阳能漏斗。



Materials needed: 需要的材料

- A reflective accordion-folding car sunshade 可反射的、叠成风琴式的汽车挡风幔
- A Cake rack or wire frame or grill 蛋糕架或者电线框或者烤架
- 12 cm (4 1/2) of Velcro 12 厘米长尼龙布
- Bucket or plastic wastebasket 塑料的盛水桶
- A plastic baking bag 塑料的烤袋

1. Lay the sunshade out with the notched side toward you, as above. 按上图所示，将挡风幔有刻度的一边放到面向自己的位置
2. Cut the Velcro into three pieces, each about 4 cm. or 1 1/2 inches long. 将尼龙片割成 3 块，每块 4 厘米长，或者 1 1/2 英尺。
3. Hand sew one half of each piece, evenly spaced, onto the edge to the left of the notch; sew the matching half of each piece onto the underneath side to the right of the notch, so that they fit together when the two sides are brought together to form a funnel. (see below) Note: I first tried sewing these on a sewing machine, but found it cut through the reflective material.

用手将尼龙片的一半缝制到有刻度长幔的左边，将尼龙片的另一半缝制到有刻度长幔的右下边，将其变成一个漏斗（见下图）。注意，我开始时用缝纫机缝制，但反光材料扎人。



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4. Press the Velcro pieces together, and set the funnel on top of a bucket or a round or rectangular plastic wastebasket. 将尼龙片压在一起，将漏斗放在塑料桶的上面或者放在一个圆的或者长方形的塑料水桶上面。
5. Place a black pot on top of a square cake rack, placed inside a plastic baking bag. A standard size rack in the U.S. is 25 cm. (10 in.). This is placed inside the funnel, so that the rack rests on the top edges of the bucket or wastebasket. Since the sunshade material is soft and flexible, the rack is necessary to support the pot. It also allows the sun's rays to shine down under the pot and reflect on all sides. If such a rack is not available, a wire frame could be made to work as well. Note: the flexible material will squash down around the sides of the rack. 将一个黑锅放在位于塑料烤袋里面的正方形蛋糕架上。美国标准的蛋糕架长 25 厘米（10 英寸），蛋糕架在漏斗里面，放置于水桶的边上。因为挡阳材料很软，易弯曲，蛋糕架必须支撑黑锅。同时，能让阳光照在黑锅的下面，使得阳光向各个方向反射。如果没有蛋糕架，可以用电线做一个框。注意，易弯曲的材料会把蛋糕架的四周压平。

After cooking, simply fold up your "oven" and slip the elastic bands in place for easy travel or storage. 烹调完后，将你的炉子折叠起来，用皮筋扎好，供旅游用或者储放。

I have found this totally simple solar oven extremely practical, as it is so lightweight and easy to carry along anywhere. But in addition, it has reached a higher temperature in a shorter time than all the other models I have experimented with so far (I haven't used a parabolic) - a little above 350 degrees F. 我发现这个简单的太阳能锅特别实用，因为它很轻，便于携带。但是比起我试用的其它炉灶，它在很短时间能达到很高的温度（我没有用抛物线的），高于华氏 350 度。

I have cooked black beans in about the same amount of time as on a gas stove; I've used it to bake breads, granola, brownies, lasagna, all sorts of vegetables, and to purify water. The sunshade may not be available everywhere, but I suspect it can be found in most urban areas, since I found it here in southern Mexico. The Velcro was also available in fabric stores. Cost of the sunshade was about \$3.00 USD; the Velcro about \$.25.

我用煤气炉烧黑豆的时间几乎和太阳能灶的时间相同。我用其烤过面包，granola, brownies, lasagna, 和各种蔬菜，用来净化水。挡阳幔不一定到处能找到，我怀疑，是否能在城市的其它地方找到，因为我只是在墨西哥南部看到。尼龙布在商店里可以买到，挡阳幔的价格为 3 美元，维卡依尼龙布大概 25 美分。

For more information about solar cooking, please visit:

Solar Cookers International is a 501(c)(3) nonprofit organization: <http://www.solarcookers.org/>

The Solar Cooking Archive (examples of various cookers you can build): <http://solarcooking.org/plans/default.htm>

Journey to Forever (solar box cookers): <http://journeytoforever.org/sc.html>

Chinese translation by Mr. Tan Yang.

