

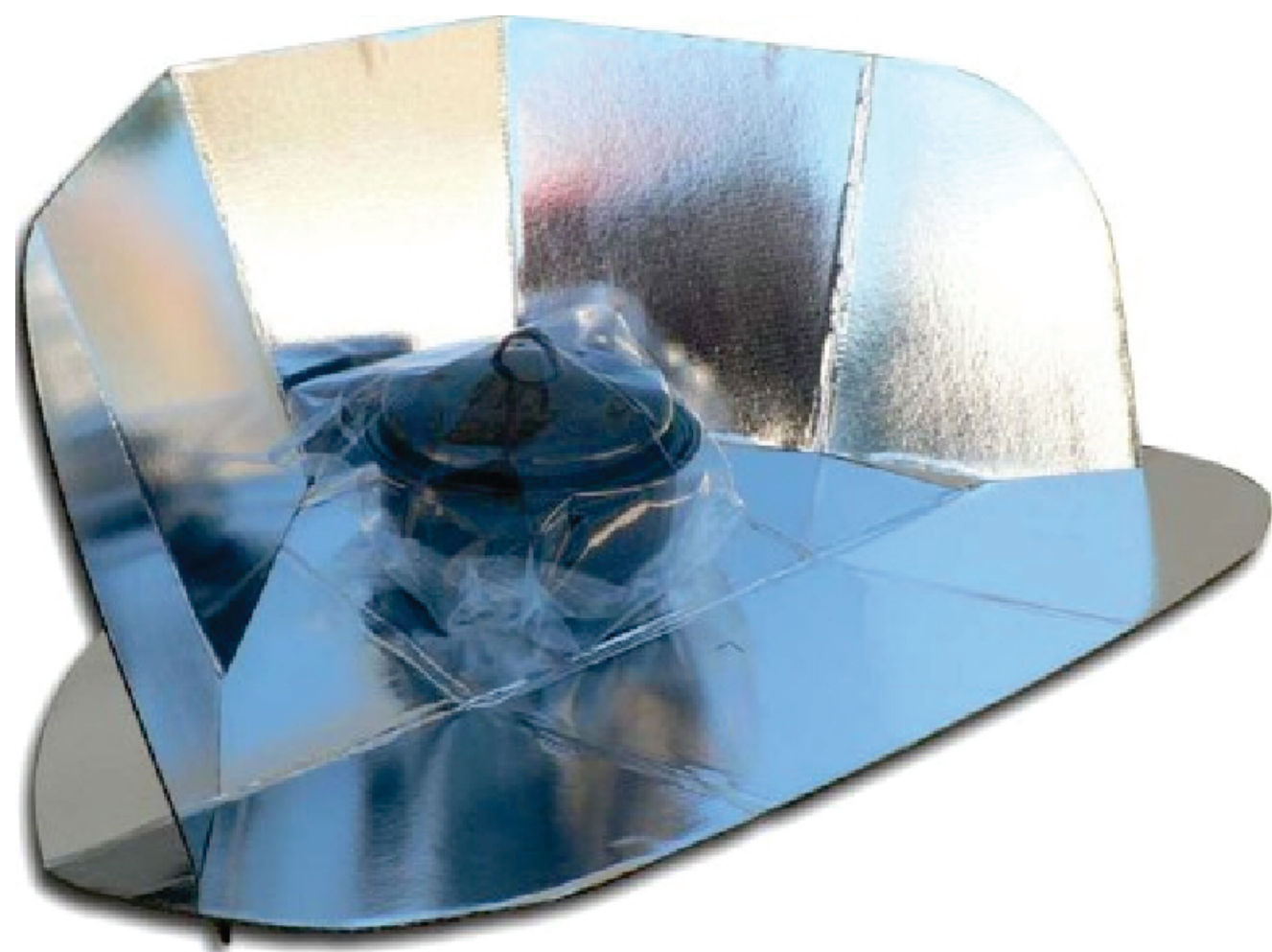
Panelbolic – an hybrid DIY project of panel and parabolic solar cooker

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1. Purpose

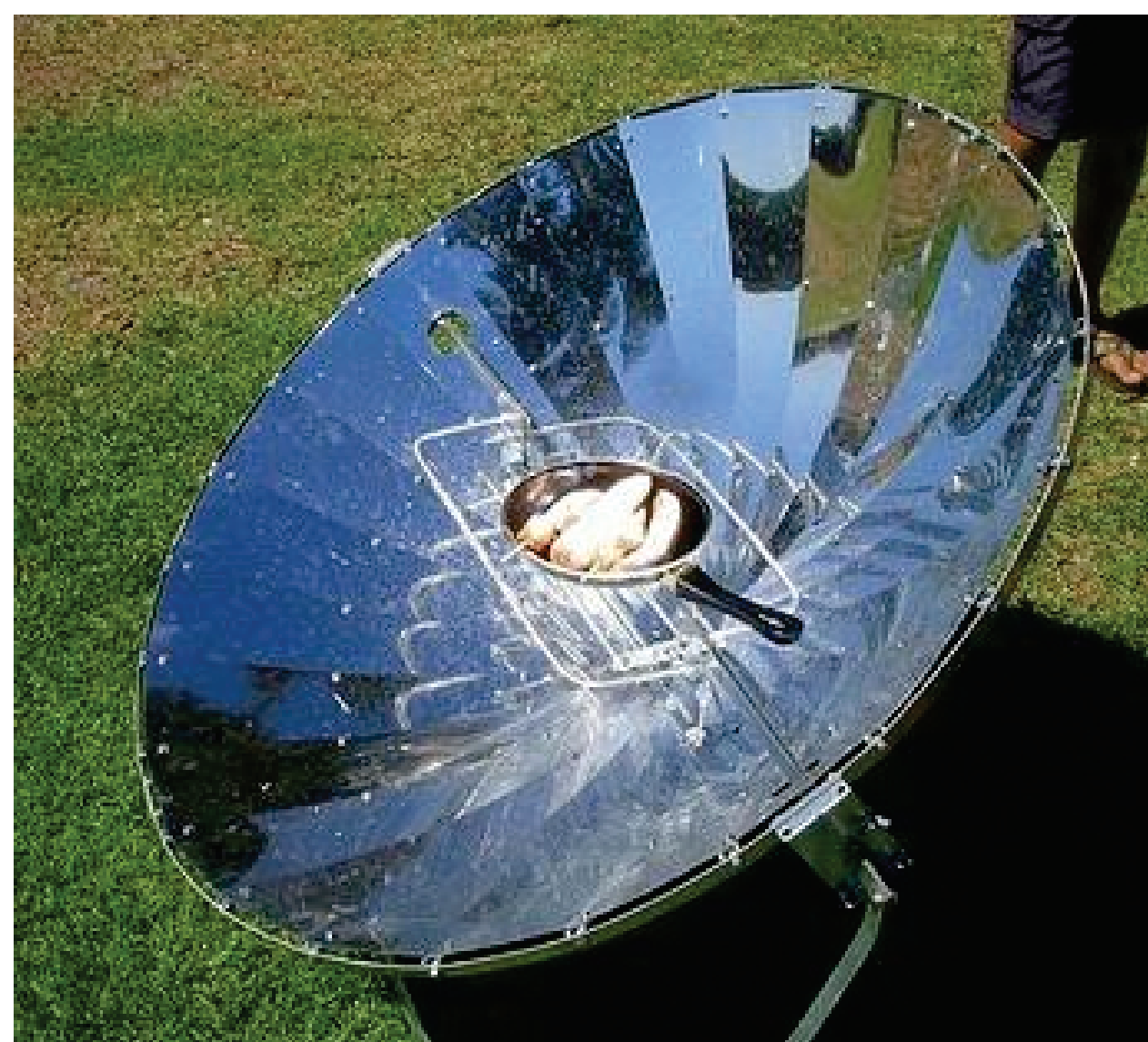
The panel solar cookers are the simplest construction and lower cost. There are several projects worldwide, can be made from cardboard, plastic, reflective material. Has lower efficiency because heat comes from top to bottom. Require black pots and greenhouse. Parabolic solar cookers has increased efficiency because they concentrate best the focus at the bottom of the pot, upwards, with rapid cooking of food. They do not require greenhouse for the best performance. Black pots are desirable but not essential.

Fig. 1 – Cookit – a panel solar cooker



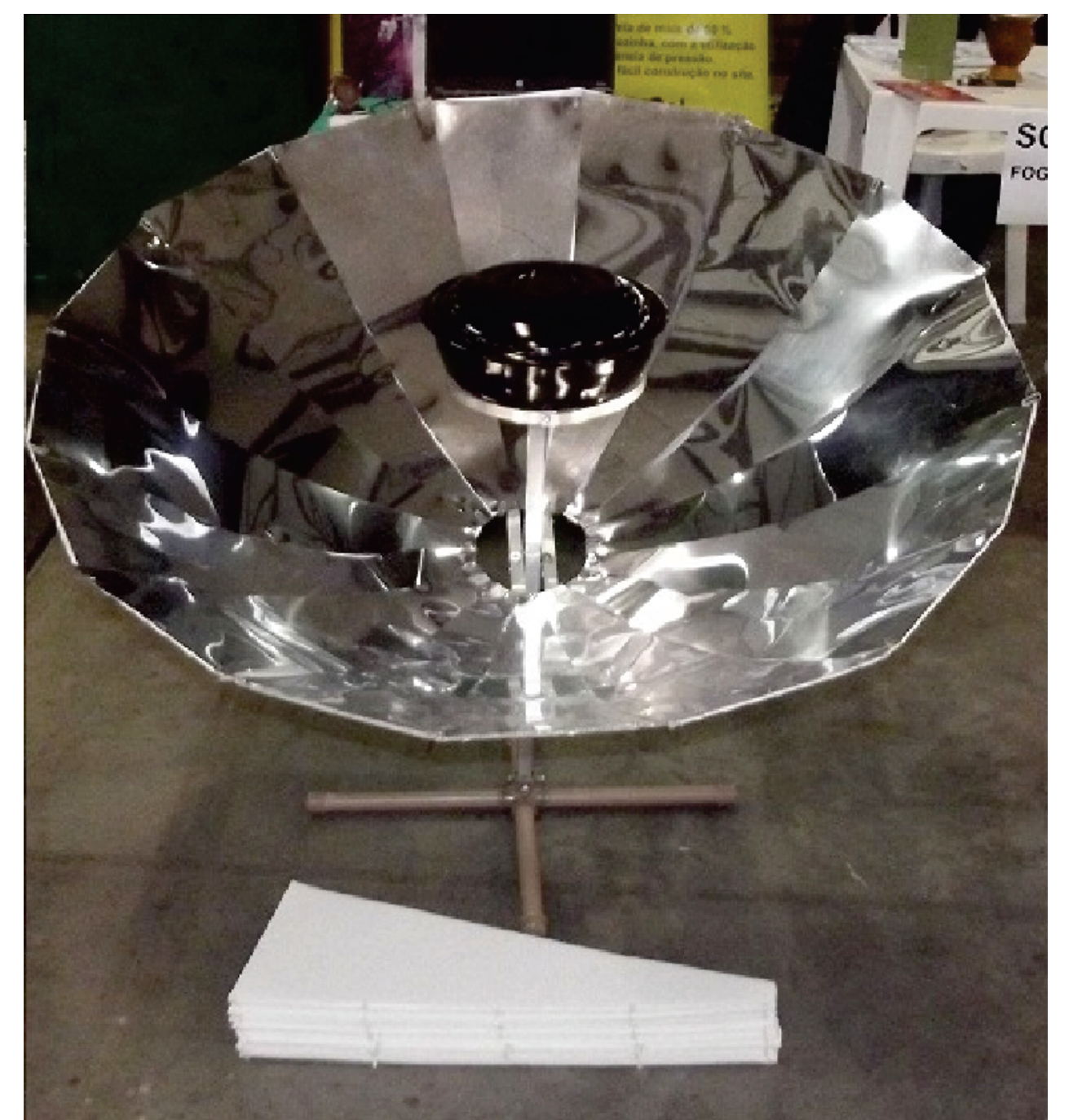
Source: <http://solarcooking.wikia.com/wiki/CooKit>

Fig. 2 - Parabolic Solar cooker SK-14



Source: <http://www.pres.org.pk/category/re-technologies/solar-energy/solar-thermal/solar-cookers/>

Fig. 3 - Panelbolic hybrid foldable and portable solar cooker



Source: the author

2. Results

The hybrid solar cooker called "panelbolico" has in its structure the panel solar cookers with the planning of the parabola. They may have 12 or 16 petals sides, and made of a material having some rigidity, such as cellular polypropylene (PP) with a thickness of 3 mm. The petals are joined with plastic loops and can be easily assembled by simply joining the first and the last petal, forcing out like an umbrella. An aluminum ring provides good rigidity to the system. The reflective material will be secured with clips in petals of parabola. A base system is required, and a vertical axis which will support the pan. To better lightness, it can be made of PVC and aluminum.

3. Conclusions

Parabolic solar cookers are expensive, heavy, and long time assembly. Panelbolic solar cookers are cheap, light, and easy assembly. Can be folded easily, being very portable. For best results, reflective film should not be glued on the petals, to prevent wrinkling. Black pots are also desirable. Every 20 minutes the solar cooker should be positioned to adjust the focus.

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