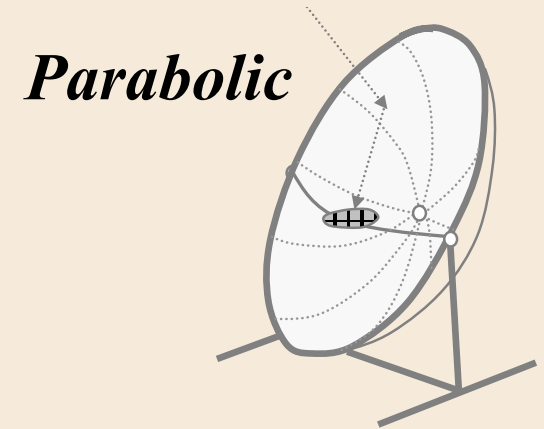
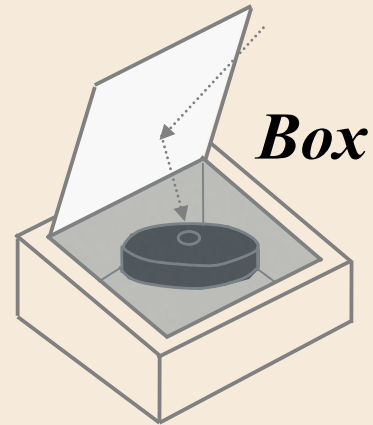
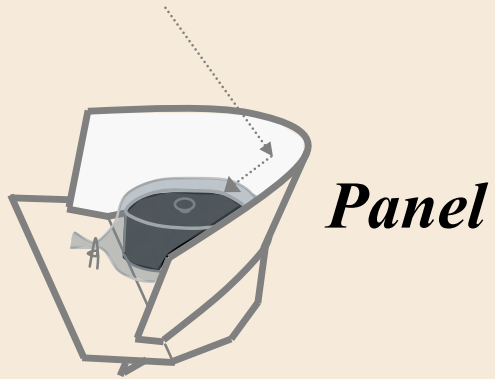


On the construction and users acceptance of funnel concrete solar cooker

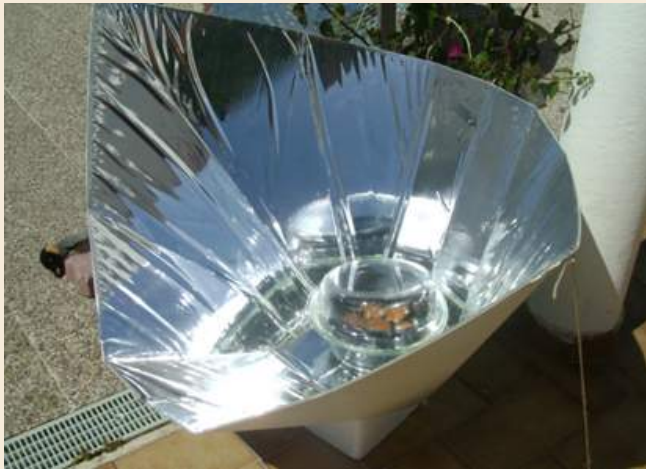


*Celestino Rodrigues Ruivo, ISE-UALG, ADAI-LAETA, cruivo@ualg.pt
6th SCI World Conference, 16- 18 January 2017, Gujarat, India*

Lesson learned from SCI conference, July 2006, Granada-Spain



Lesson learned after SCI conference: Portable funnel cooker



Concrete funnel cookers built in Portugal, 2009 and 2015



Construction of molds and concrete filling process, Dhule India 2015



Concrete funnel cooker manufactured in Dhule-India, 2015



First test of cooking with concrete funnel cooker in Dhule-India, 2015



*“Caldeirada”:
portuguese dish*



Indian family using funnel concrete cooker and parabolic cooker

Advantages about the concrete funnel cooker (family feedback):

It is heavy and unaffected by wind. The solar cooker does not get toppled by the wind as it is pretty heavy.

The Pin joint (bearing) is good for turning and focusing without much of effort.

It is practically a non-tracking solar cooker. You keep the food and adjust the solar cooker once.

With some experience people can advance the solar cooker direction a bit to the west to use more of a solar window without tracking.

Quality of food, especially boiled food and puffy stuff like breads and cakes is great

Reflector shape is permanent and no skill is required in adjusting the shape of the reflector. Even novice people can use this solar cooker.

Polished, anodized hardened aluminium reflectors have very good life.

Limitations of the concrete funnel solar cooker (family feedback):

Manufacturing solar cookers at site is required as transportation is difficult.

Procurement of suitable glass enclosure is another issue that needs to be resolved.

As the market size for this design of solar cooker will grow, manufacturers dedicated design of glass enclosures can be developed.



Second manufactured set of molds in India, Indore-Dec 2016



Final Remarks

Idea of constructing funnel concrete cooker is a result of the experience in testing and using several types of portable panel solar cookers on a daily basis.

Fixed solution of solar cooking device like a permanent barbecue close to house/conventional kitchen is very important to keep user motivated in cooking by the Sun.

Resistant to weather conditions is another important issue to be guaranteed.

Production process of funnel concrete cooker is easily implemented in different parts of world.

Concrete cooker should be imperatively produced locally due to transport costs.

Minor instruction how to make the cooker is important but not high skills from the workers are needed.

A construction worker like a bricklayer or a mason has the suitable professional profile to make concrete cookers when moulds are available.

A small industry of making concrete artefacts has also the facilities for large scale production of the main pieces in concrete.

Few sets of molds have been built and several funnel concrete cookers have been constructed in Portugal (2009) and more recently in India (Dhule, Indore).

Final Remarks

One of the main difficulties in disseminating solar cooking is strongly related with the acceptance by the users.

The potential of solar cooking is enormous but unfortunately true success of solar cooking is not many.

Starting a project in a rural area or even in a city should be based on both social and technical approaches.

Advocates on solar cooking should act as a missionary with a multiplying effect converting users as missionaries.

It is important that an advocate of solar cooking lives for some time within the community to be considered one of them and to understand what are the common meals people are used to cook and what are the meals that can be easily replicated in solar funnel cooker.

Advocate should execute and document recipe for local meals. It is important to highlight that solar cooking is not an alternative solution to the conventional process based on gas, electricity or wood, but in sunny regions it is a solution for saving fuel and helping environment.

Advocate of solar cooking faces several barriers. To overcome the barriers a great effort should put on it, sometimes without successful results, to promote the acceptance of solar cooking by people.

Solar Cooking: Excellent way of making friends for all life

“Funneled products”: solar carob cake and jam of pumpkin



*Take a slice
and enjoy
the world
of
solar cooking*

