

Third International Conference **CONSOLFOOD**2020
Advances in Solar Thermal Food Processing

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INSTITUTE OF ENGINEERING; UNIVERSITY OF ALGARVE; CAMPUS DA PENHA; FARO-PORTUGAL

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**A Parabolic Solar Cooking Device Developed in
Lesotho, Southern Africa**



Africa and Middle East





$$y=x^2/1500\text{mm}$$





Simple dual axis tracking.









Baking Trial:

- A batch of dough for buns was mixed at about 830 and included:
- 8.5 cups flour (2.125 l).
- 15 ml dry yeast.
- 5 ml salt.
- 800 ml water.
- 30 ml margarine.
- 30 ml sugar.
- 1 whole egg and the white from a second egg.

Interval Minutes	Start Time: 11:30	W/m²	Temperature	Remarks
Empty		724	194°C	Tube empty and door closed.
0		723	186°C	Oven loaded
5		728	169°C	
10		723	163°C	Slight cool breeze.
15		726	163°C	
20		725	166°C	Air still.
25		719	170°C	
30		725	173°C	Puffs of steam passing door.
35		726	173°C	Aroma of baked bread evident.
40		724	174°C	Bread removed.







Typical Weather Forecast

Thursday

31 °C



Clear

Friday

34 °C



Clear

Saturday

36 °C



Clear

Sunday

37 °C



Clear

Monday

34 °C



Clear

Tuesday

32 °C



Chance of Rain

Manufacturing and assembly
details and process.





















Thank You.
Ivan Yaholnitsky



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