A Tolokatzin variant composite parabolic concentrating solar cooker is built, a thermal analysis is carried out, the axial, radial temperature profiles inside and outside the tube are obtained at different times of the day and its thermal performance with food inside to demonstrate its capacity to mitigate greenhouse gases and the benefits that would be obtained from being implemented at the city level, as well as at the national level.

### Experimentation and measurements

Taking into account the high concentrations of pollutants that exist in the air in a city as populated as Mexico (8.918 million inhabitants) and the health problems that are there, it is necessary to attack the problem. A very good strategy to breathe a cleaner air in cooking food that uses solar energy.

### Thermal Profile & Efficiency

By placing in the sun a solar cooker with food on August 18 in Mexico City, with a level of insolation of the order of 5.3 kWh/m², that leads to a thermal efficiency of the order of 17.88%. Assuming that the solar cooker is used in a day at least 3 hours in the home, the heat used is 1.96 MJ, which represents the energy displaced by fossil fuels, which represents savings in one day. Taking into account its useful life of 15 years, the energy saving could reach 10.71 GJ unitarily. The scope and impact that this solar technology could have is the reduction of 1.43 MtCO² nationwide.

### References