

AMANACER: THE CORNELL SOLAR OVEN TEAM

Current Research

INDOOR LIGHT SIMULATION SYSTEM DESIGN

DESIGN

- Uses 14 halogen and incandescent lights of different intensities that nearly match the sunlight spectrum
- Similar light intensities as Nicaragua

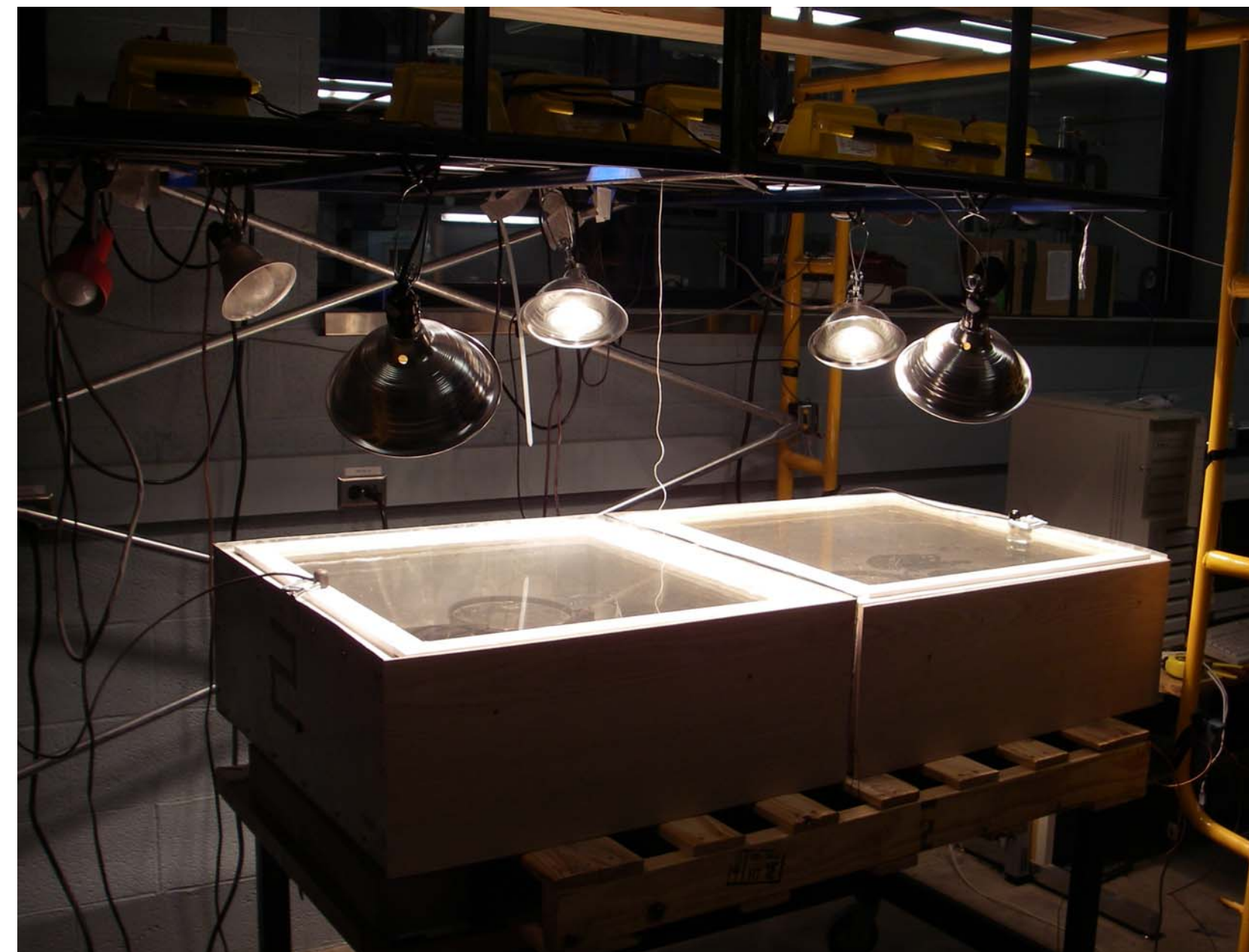


BENEFITS

- Provides a consistent testing tool for future research
- Can simulate different sun light environments regardless of Ithaca weather

SOLAR COOKERS CONSTRUCTION

- Built two solar cookers using the exact methods and materials as Grupo Fenix in Sabana Grande
- Tested each oven twice using the light system and found that they were nearly identical (see graph below)



IMPROVEMENTS

- Designed improvements to the glazing system
- Determined more effective construction methods

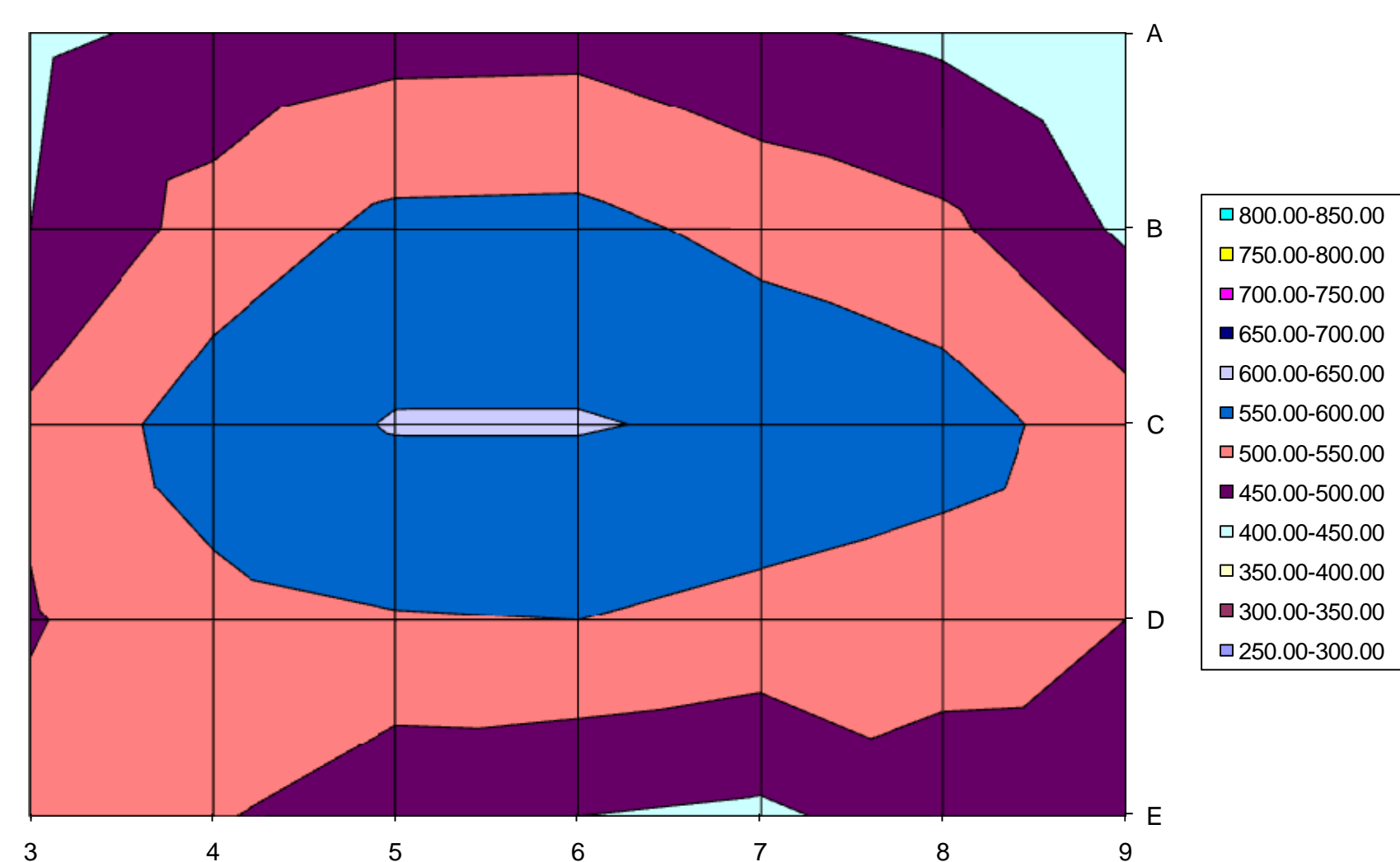
FUTURE PLANS

SOLAR BOX COOKERS

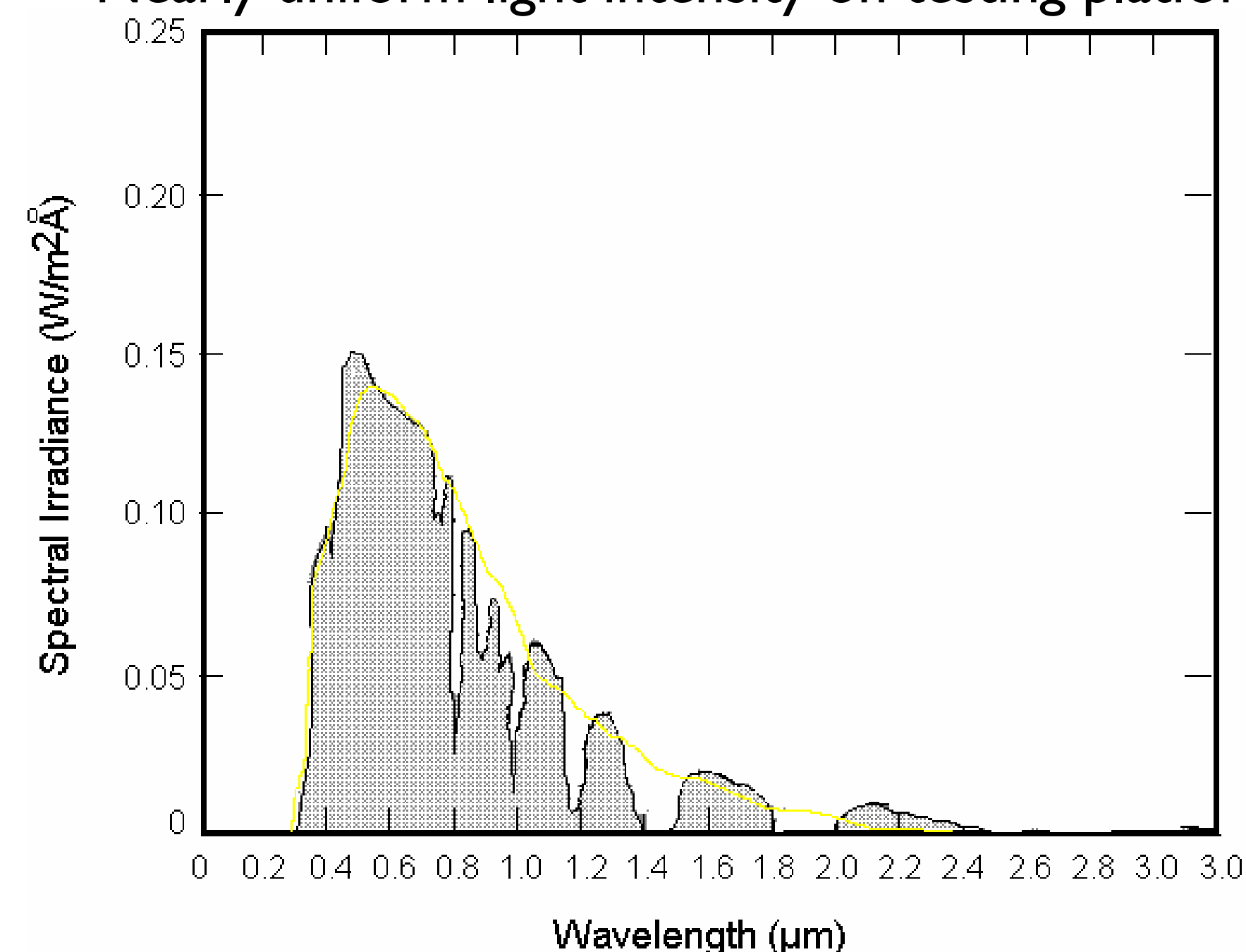
- Research ways to reduce the construction costs in Nicaragua
- Experiment with different materials, design modifications, and oven sizes to increase range of cooking capabilities

PARABOLIC SOLAR COOKER

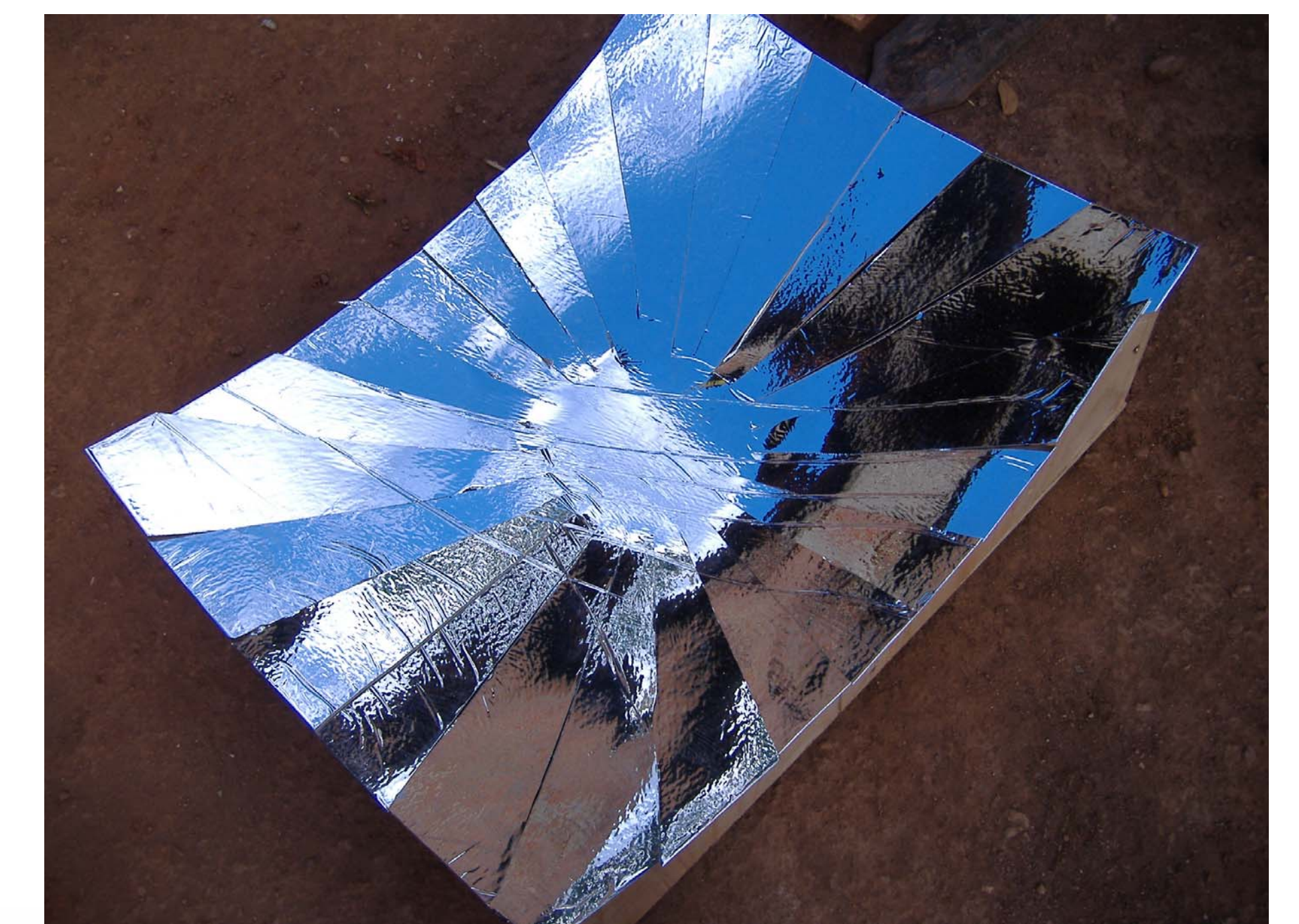
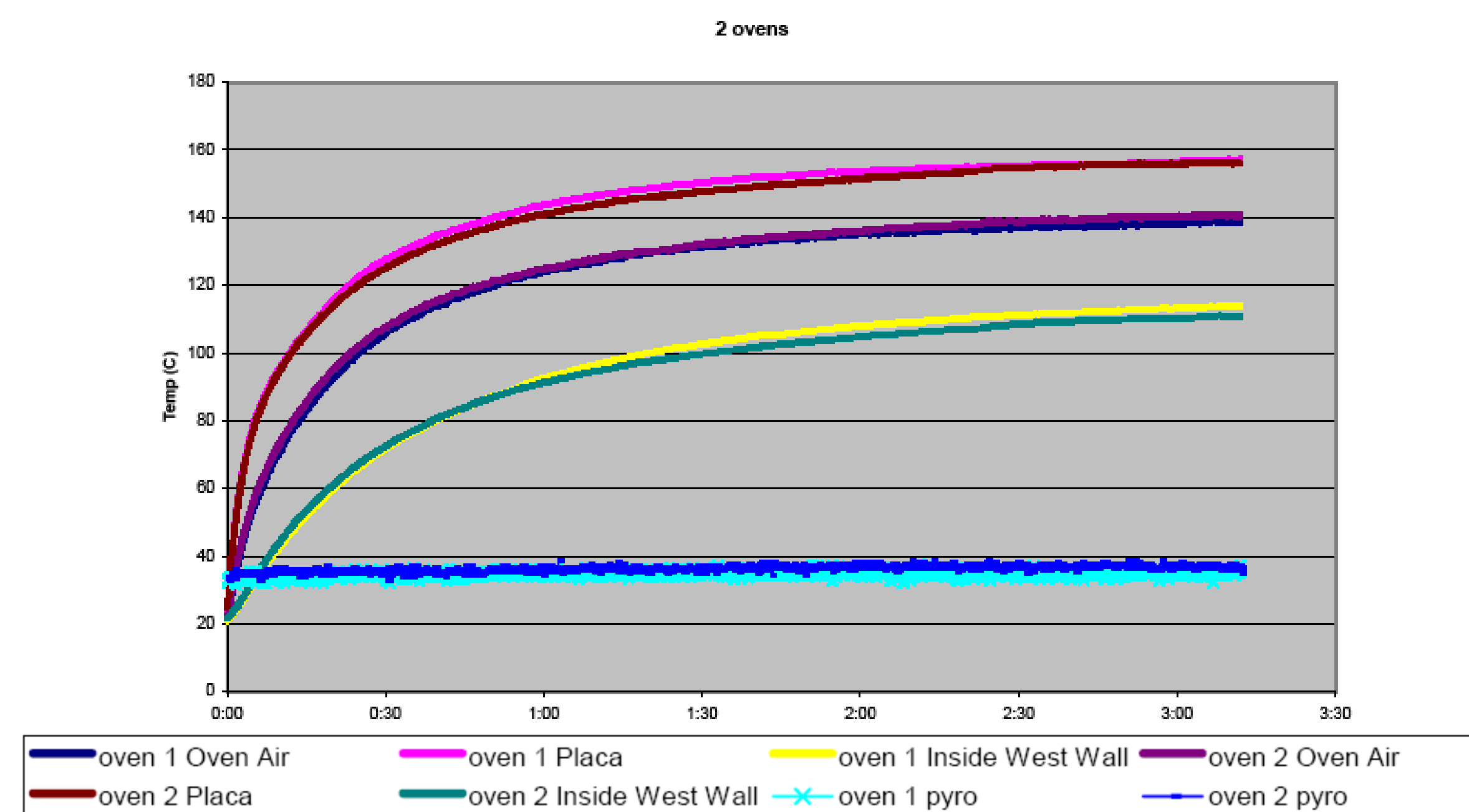
- Begin research on a parabolic solar cooker that could be built cheaply using recycled plastic
- The parabolic solar cooker will concentrate one square meter of solar radiation onto an apparatus for cooking or other application such as water purification
- Develop a computer model to optimize the parabolic cooker and simulate performance with given parameters and variables



Nearly uniform light intensity on testing platform



Sunlight (yellow) vs. indoor light (grey) spectrum

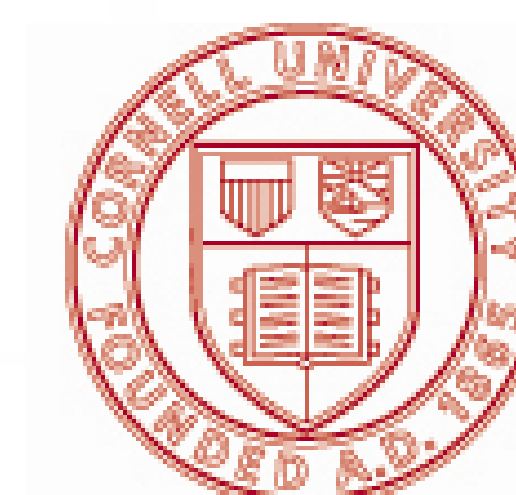


Parabolic cooker in Nicaragua



Engineers for a Sustainable World
Cornell Chapter

http://eswserver.cee.cornell.edu/esw/project_pages/SolarOvens/



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