

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Heat of Combustion of Dried and Undried Coffee¹ MATHEW GISO, SAMUEL AMANUEL, Dept. of Phys. Astro., Union College — Globally, over two billion cups of coffee are consumed per day. During roasting, 15-20% of the weight of the coffee beans is lost. We studied the gasses released during the roasting process using an IR spectrometer and identified the evaporation profile of water as a function of temperature. The heat of combustion ($H^{\circ}c$) of the beans was also determined using an Isoperibol Oxygen-Bomb calorimeter and the $H^{\circ}c$ of dry beans were determined to be 21.24 ± 0.13 MJ/kg while the $H^{\circ}c$ of the wet beans were determined to be 19.56 ± 0.12 MJ/kg. This study can potentially lead to developing more economical and environmentally friendly techniques of roasting coffee beans.

¹This work was partially supported by NSF-DMR: 1229142.

Samuel Amanuel
Dept. of Phys.
Astro., Union College

Date submitted: 06 Nov 2015

Electronic form version 1.4