Innovation & chaos ... in search of optimality

Improving charcoal manufacture from coconuts in Samoa: an exemplary project-based learning adventure

Coconuts abound in the beautiful Pacific country of Samoa. Charcoal, manufactured from coconut shells, is a biofuel with several uses. In addition to domestic cooking, charcoal is used for providing...
Charcoal manufacture is a labour-intensive and smoke-intensive process conducted using the basic technology of a used 40-gallon steel container. The process appears inefficient in terms of wasted fuel, and environmentally unsatisfactory in terms of the smelly and visually-unattractive smoke generated.

**Image: Charcoal-powered smoothing iron (Best Cook and Lite Co Ltd, China)**

**Your mission:** Surely there must be a simple cost-effective modification to the basic process that can be made to:

- Improve the efficiency of converting the input coconuts to output charcoal
- Reduce the volume and/or toxicity and/or visual colour of the smoke produced
- Use the smoke produced as a biogas suitable for some heat-generating purpose.

The advanced student will also:

- Identify more valuable uses for the coconut shells
- Identify alternative resources available in Samoa for producing the services (cooking, ironing) currently provided by the coconut charcoal that are more economically and environmentally sustainable
Related


Innovation & chaos ... in search of optimality — Improving charcoal manufacture from coconuts in...
Innovation & chaos ... in search of optimality — Improving charcoal manufacture from coconuts in...

I reward EXCELLENCE!...

I reward OUTRAGEOUS failure!! ...

But I do not reward MEDIOCRITY!!! ... *(Peter Mellalieu)*

A *po.fessorial po.collage* from a tertiary educator as he inspires pursuit of the *highest awards* for innovative teaching and learning from Aotearoa New Zealand.

*Check out my about.me page!*  

Useless digital marketing campaign #2. "Let's try to sell the IDENTICAL product to someone who has already just... http://t.co/d7ikqfCufL, LICT- NZ http://t.co/pbO52XM5tr
Help! Why is the roof of my bread collapsed? I am experimenting http://t.co/JDrCXWq2za
http://t.co/t06iYkOMp9
Moroccan Cafe after the Showstakovitch (s) http://t.co/Ote1jmdzNu
Moroccan Cafe after the Showstakovitch (s) http://t.co/1aQxRpDOp3
Looking forward to hear an old vinyl favourite from university days performed by #APO, Symphony No. 12... http://t.co/L8QsL5VICm
I liked a @YouTube video http://t.co/kCO2OK7Xyw Thomas Quasthoff - J.S. Bach: Großer Herr, o starker König - BWV 248
Check out bankofbiology's post! http://t.co/MdGu4r5gPx http://t.co/fJD6PNcBzG
I liked a @YouTube video http://t.co/TAUw3Q1uV GBMP Lean Training DVD: Toast Kaizen - Introduction to Lean Manufacturing Preview