

# Robert Flanagan's Biochar Stove Carbon-Negative Cooking

Robert Flanagan, a biochar pioneer with connections on



four continents around the world, is among the few who rank as biochar's early advocates, innovators, researchers, and business developers. He remains on the creative cutting edge of biochar development and deployment.

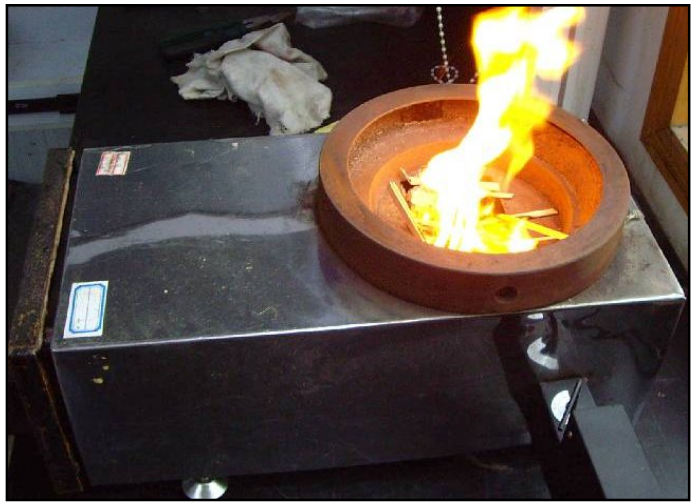
Originally from Ireland, as a youth, Robert emigrated to Australia to work as industrial combustion-electric technician. Years later, researching investment options, he saw the BBC documentary *The Secret of Eldorado*. Research on *terra preta* led him to the U.S. in May 2004 to a University of Georgia bioenergy

conference. He began assisting EPRIDA at UGA Bio-conversion Center, where his creative enthusiasm inspired several experiments and innovations. Robert helped wire, maintain and monitor the EPRIDA 150-kilogram test burner, and devised simple soil tests to evaluate biochar effects on soil and biomass.

Interest from overseas quickly generated a trip to China and a request for Robert to focus on Asia. Disillusioned with slow progress and US government continuing to discourage serious renewable energy research and development, Rob moved to Hangzhou, China, where he is Chair & President of Hangzhou Sustainable Agricultural Food & Fuel Enterprise Co. (SAFFE), making biochar from rice hull and bamboo, and organic plant nutrients.

Rob conducted a wide range of agricultural trials in pots and plots, using biochar, organic foliar feeds and nutrients. He continually posts photos, videos and information to share his valuable research with anyone in academia and general public. His openly shared information at a time when few scientists divulged results before publication—testimony to his enthusiastic dedication to avert climate change and mitigating global warming.

Rob also produced 50kg of research-grade biochar, which he sent to ten top biochar universities in the world to initiate research collaboration. Rob remains integral to global biochar research. With Chinese researchers, Rob built large burners to produce



tons of charcoal.

However, perhaps Robert's most impressive invention is a tabletop charcoal-maker—also a one-burner cookstove. Now, climate-conscious housewives can proudly have a carbon-negative kitchen to capture carbon with every meal.

A variety of fibrous organic matter—cornstalks, bamboo, nut shells, wood chips, straw—can be packed in the box, then ignited at the burner. The stove is reloaded with more fuel to cook as long as needed. A recent stove demonstration with corncobs ran

for 25 minutes and boiled 10 liters of water before charcoal remaining was taken out.

Robert presented his work at the first International Agrichar Conference in Terrigal, Australia in April 2007. He questioned the push for industrial-scale biochar technology, pointing out a simple stove can be sold to a billion developing world farmers to whom food and fuel shortage is real. Rob demonstrated his stove on a New South Wales seashore as world



leading mycologists and biochar advocates toasted marshmallows!

Biochar research is exciting to read, but to see a small metal box turn biomass into char is real and reassuring. Further, eating food from a carbon-capturing cooker inspires hope, and offers a sweet taste of the future! The next stove will run off the grid to use in areas without electricity, such as developing countries, or after natural disasters to sanitize drinking water and cook food.

Rob's research isn't limited to China. His next journey is to Indonesia, where he is involved in biochar projects with Indonesian government. He will research using biochar, efficient microbes (EM) and animal waste, initiate further field trials, and continue developing the Flanagan Stove.

These days, this wandering Irishman calls New Zealand home—renowned to be 'clean' and green! The immense personal sacrifice he has made, time away from family and loved ones, life savings invested, and tireless effort of seven day weeks for over three years, speak of his commitment, courage, dedication, and persistence in the face of abrupt climate change.

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