

BIOMASS MICROWAVE CARBONIZER (BMC)

PATENT NO. PI 2013003117



BMC-10 Prototype



BMC-250 Pilot Plant

INTRODUCTION

Bio-charcoal or known as "biochar" is high in demand nowadays. However, there are only a few companies that produce biochar. Malaysia's biochar production are still limited with conventional technology. Traditional or conventional biochar-making technologies are energy inefficient, highly polluting and also time consuming.

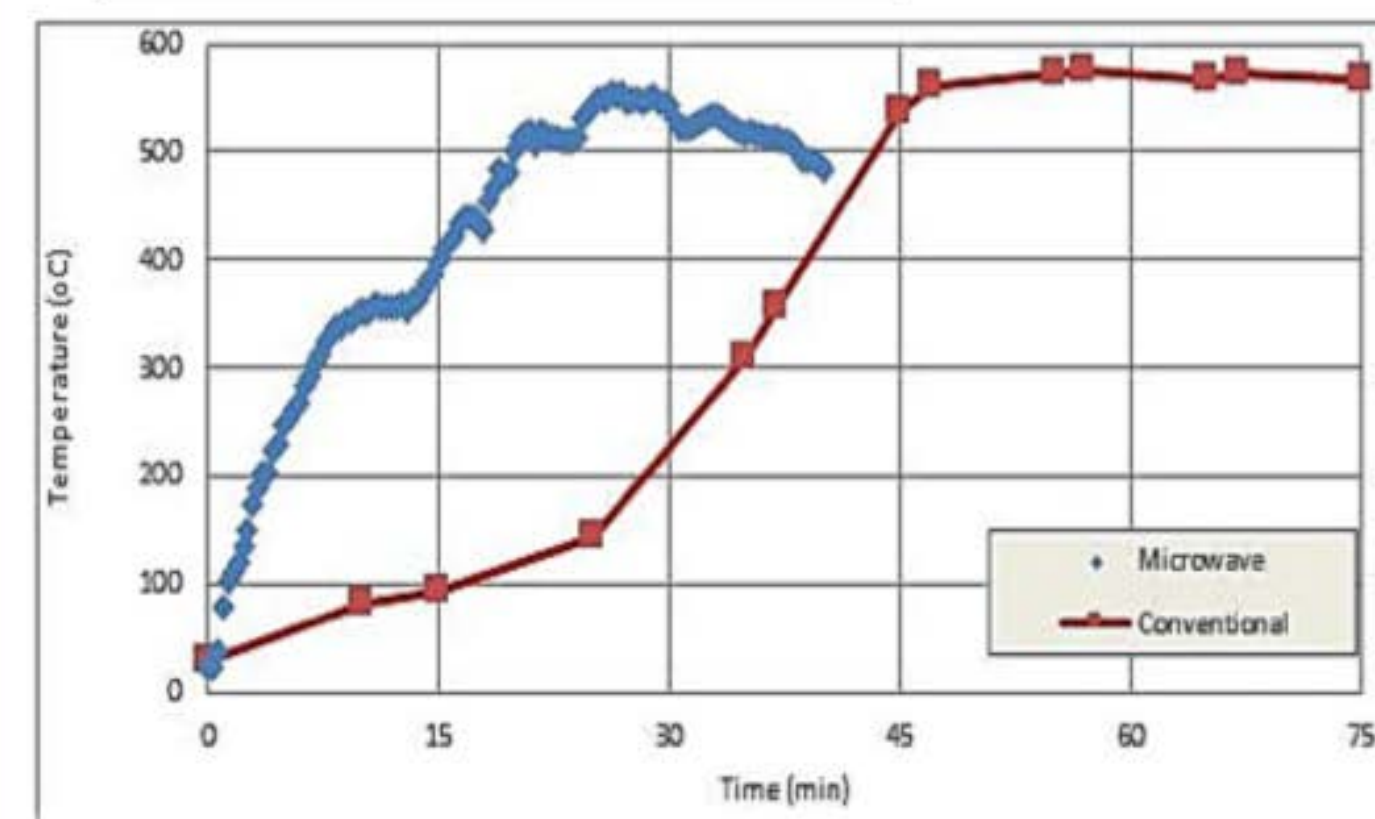
INVENTION

- Biomass Microwave Carbonizer (BMC) adopts innovative clean technology using microwave energy to burn biomass wastes and agricultural wastes into high grade of biochar.
- It is highly efficient and environmental friendly system which gives innovative way of handling variety of biomass wastes include fuel wood, forestry wastes, crop residues, landscape residues, domestic wastes and animal wastes.

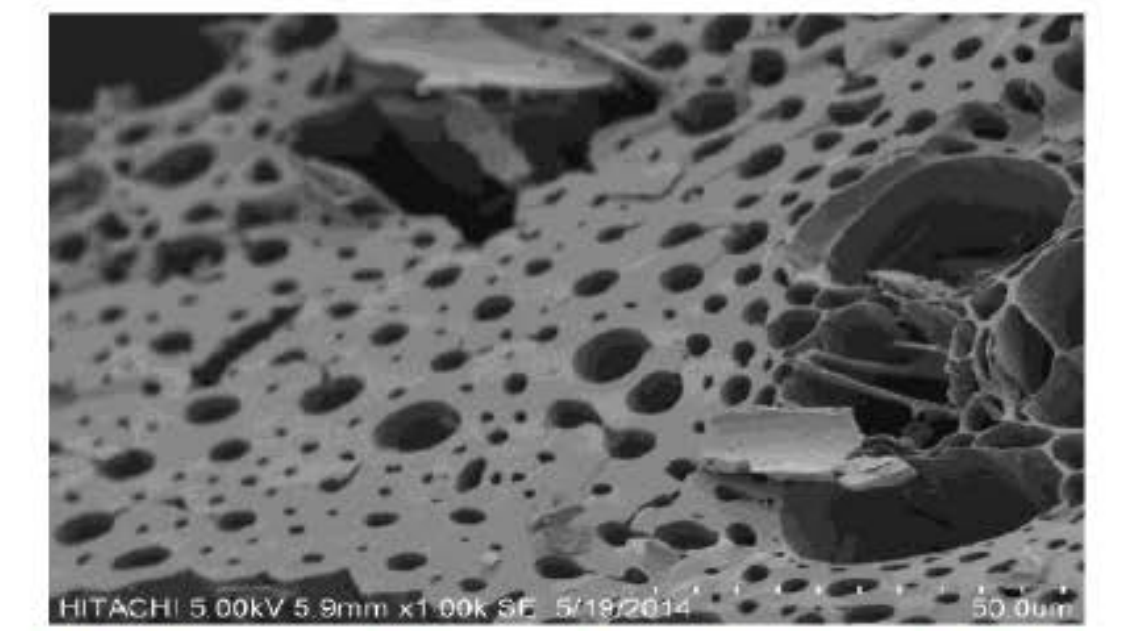
ADVANTAGES

- Give 5 times faster and efficient burning process than the composting or incineration method.
- Give 20% higher production capacity of biochar product.
- Save 58% of energy consumption than diesel.
- 51% more energy efficient than the conventional system.
- A cleaner production process with 70% less carbon emissions.
- Produce high biochar quality compared to the biochar produced from conventional method.
- Compactness and portable system of BMC system (30% - 50% smaller from conventional system) is easily be accommodated.

Our EFB Biochar Specification	Value
Gross Calorific Value (CV)	6,318 kcal/kg
Fixed Carbon content	32 %
Volatile matter	51 %
Moisture	8 %
Ash content	9 %



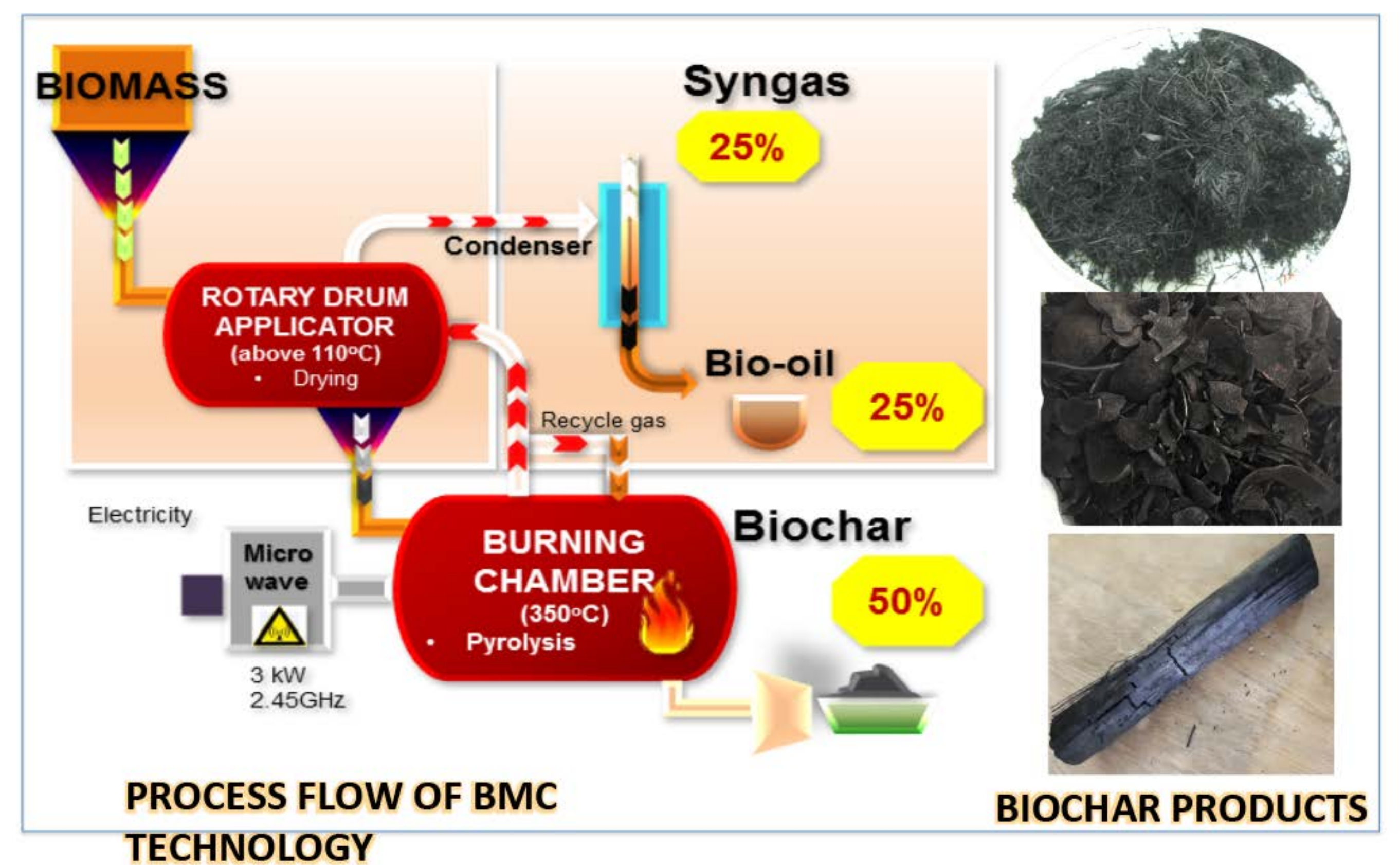
Comparison of temperature rise between Conventional & Microwave Pyrolysis



High porosity under SEM analysis



Adsorptive capability of biochar



BIOCHAR PRODUCTS

MARKET POTENTIAL

1. BMC system is suitable for B2B market:
 - Biomass or agro waste generators
 - Power generators
2. Biochar is suitable for B2B and B2C market:
 - Green fuel for industrial and domestic heating.
 - Soil enrichment and remediation for farming and agricultural use.
 - Raw material for activated carbon production.

Consumer/End User

- Charcoal traders, hotels, caterer, restaurants and food outlets, hypermarkets and retailers.
- Farmers and fertilizer manufacturers.

Industry

- Coal or EFB power plants, coal traders, and boilers.
- Food service industry
- Activated carbon producers



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