

Development and Application of Biomass Resources in Local Area



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Keywords	Recycles, Charcoal, Silk Fibroin, Microbubbles		
Technical Support Skills	<ul style="list-style-type: none"> • Applications of charcoals from recycling of waste woods • Applications of finebubble technics to local industries • Applications of silk fibroin and cellulose to functional materials • Basics on Polymer Science 		

Research Contents

Since much drifting-ashore garbage piles up the Yamagata seashore, we are anxious about having serious influence on sightseeing, a fishing, shipping and an ecosystem. Also in drifting-ashore garbage, an effective reuse system is desired from driftwood and a fishing net being difficult to collect. So, at this laboratory, the "portable simple charcoal kiln" was developed, and the charcoal burner was performed there. It is for attaining cost reduction of a waste treatment. Especially as for the driftwood of Tobishima island this charcoal is tried by dryness of the flying fish.

The sterilization system using "microbubble technology" is under actual proof. It is research for sending a natural rock oyster to consumers safe and safely. There are same examples of the technical support for the fishing and agricultural industries in the area.

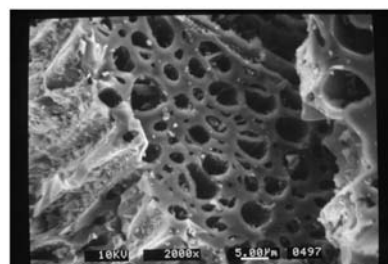
Drift woods



making charcoals



SEM image of the charcoal



Fine bubbles generator



sterilization of rock oyster by fine bubbles



Available Facilities and Equipment

Differential Scanning Calorimetry (Shimadzu DSC50)	Finebubble generator
Mechanical Testing Machine(Shimadzu EZ test EZ-S)	Ozone meter(Kasahara O3-3f)
Extruder(Imoto PPKR150)	Ozone generator(Shoken SK202c)
Charcoal roasted kiln	Dissolved oxygen meter (DO-5509)
Infrared spectroscopy(Shimadzu IRAffinity-1)	Water purifying apparatus(Merck Millipore Elix Essential)