



Emerging Pollutants: Protecting Water Quality for the Health of People and the Environment

High surface area chemically activated carbon derived from bamboo sawdust for the remarkable removal of paracetamol from water. Sorption kinetics, isotherm, thermodynamics and regeneration studies

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Introduction

Rapid Population Growth



ECONOMIC GROWTH

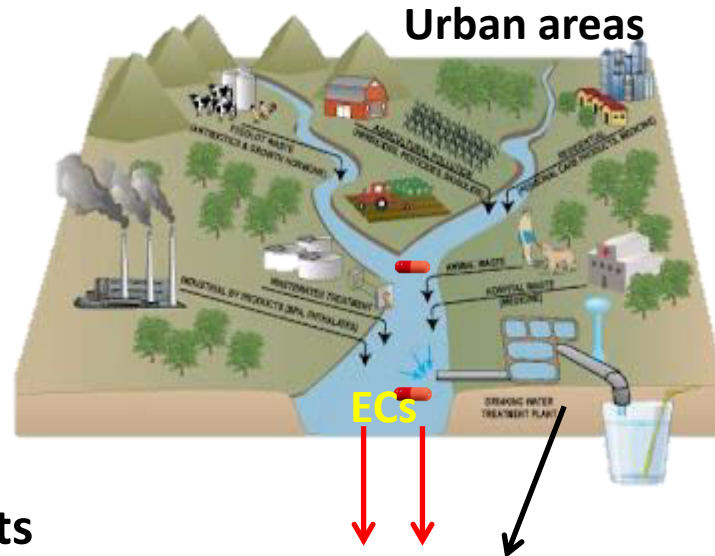


Environmental Burden



Introduction...

Anthropogenic activities



Emerging water contaminants (ECs).... PPCPs



Threat to humans



Removal Technologies

Research!!

- **Advanced Oxidation Processes (AOPs)**
- **Adsorption**
- **Membrane technologies**

Issues associated:

- **Cost**
- **Safety**
- **Operational difficulty**



Research is going...

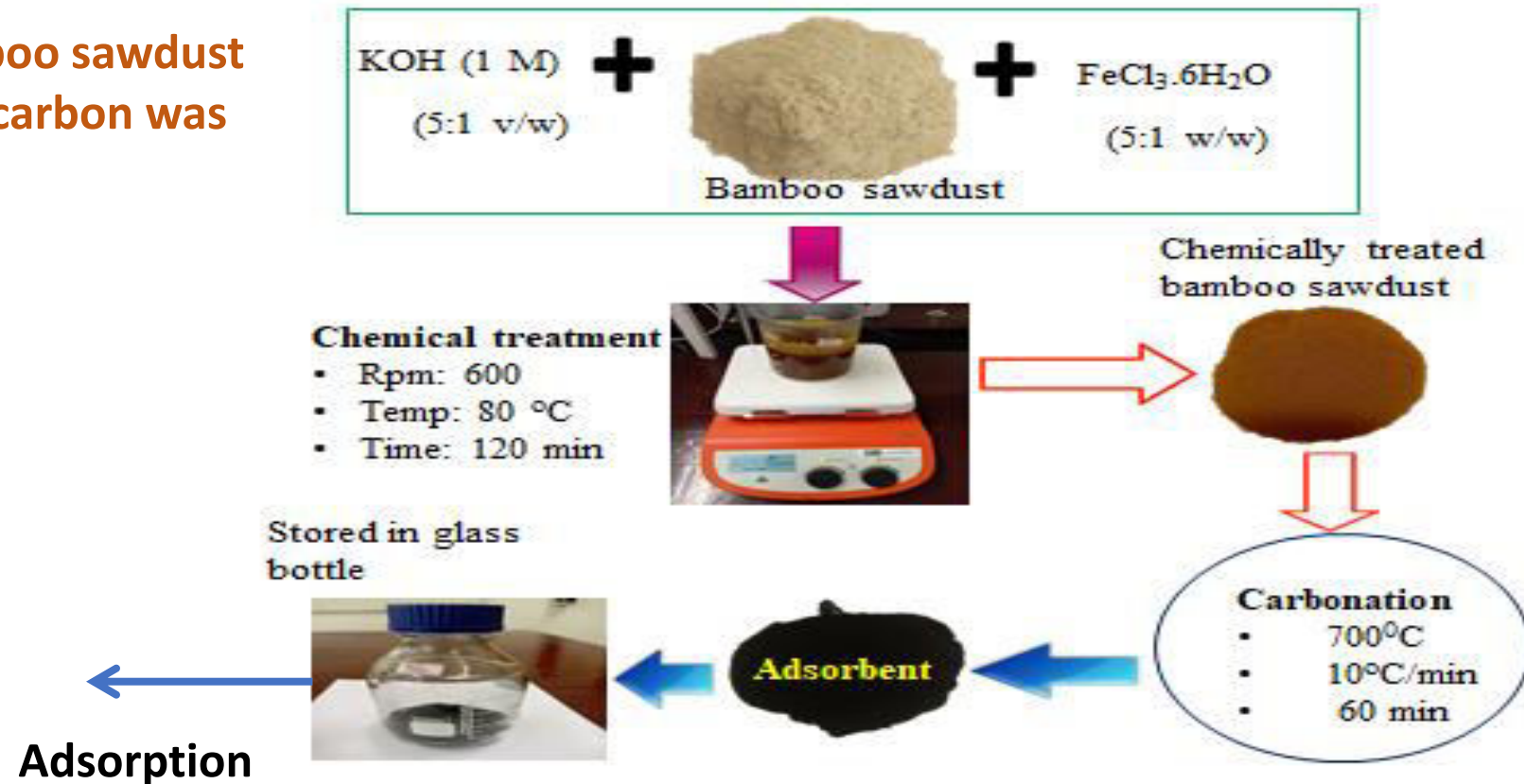
Low-cost, safe and sustainable technological options



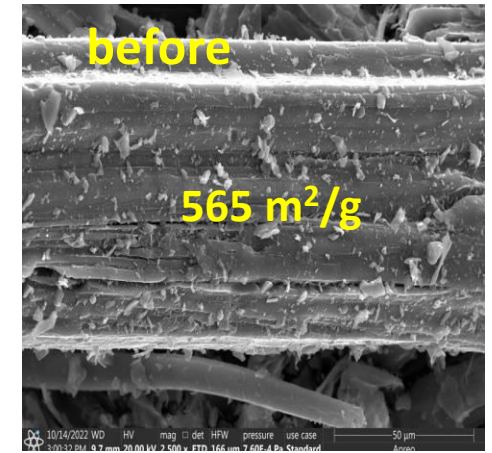
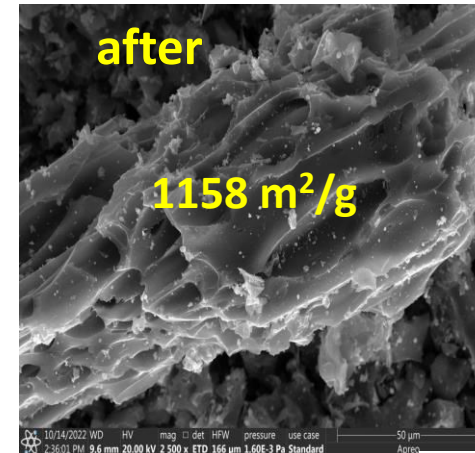
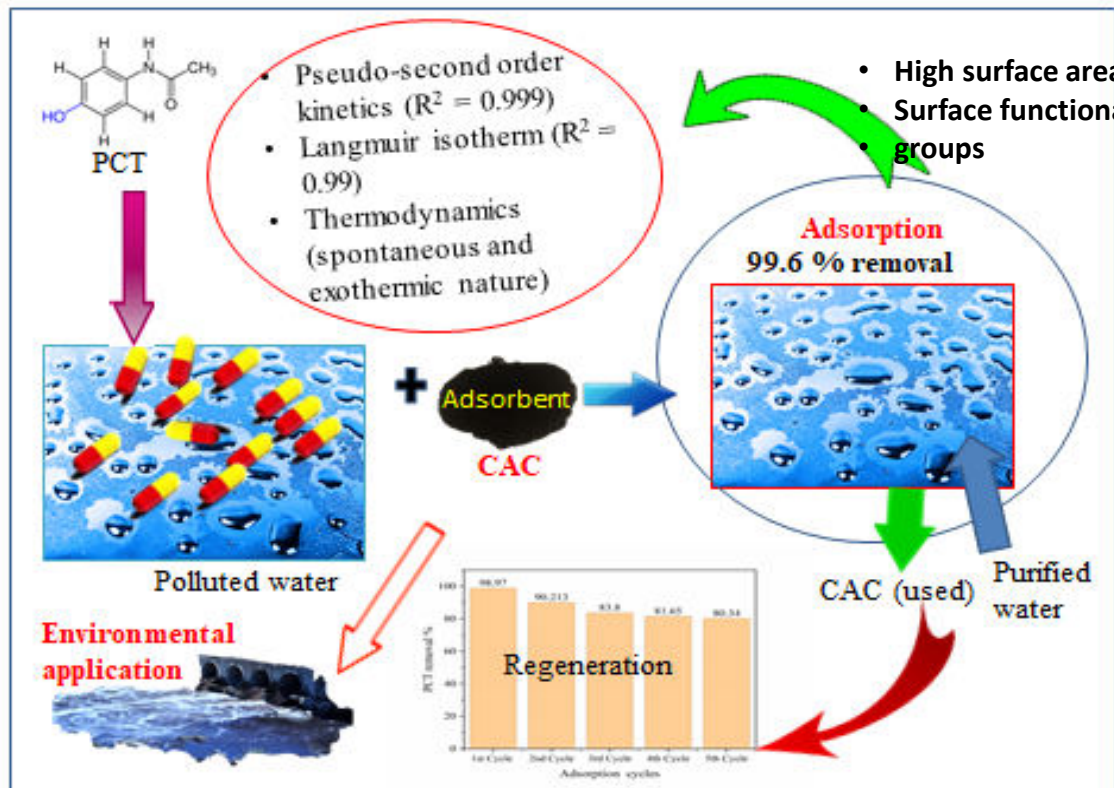
Adsorption

Adsorbent Preparation

In this work, bamboo sawdust derived activated carbon was prepared.



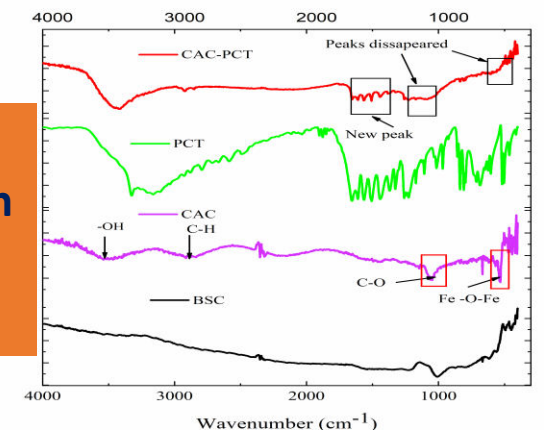
Results



Optimal Cond.

pH = 8.0
Contact time = 90 min
CAC dose = 0.5g/L
PCT = 20 mg/L

- CAC = 99.5 % R
- BS = 43.65 % R



Conclusion and future direction

- ❖ CAC adsorbent is an efficient, reusable and low-cost adsorbent.
- ❖ CAC need to be tested on multiple contaminant removal.
- ❖ Coupling adsorption with other technologies such as AOPs has greater benefits.
- ❖ We intend to couple adsorption process with AOPs such as ozonation.

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Thank You!!!