

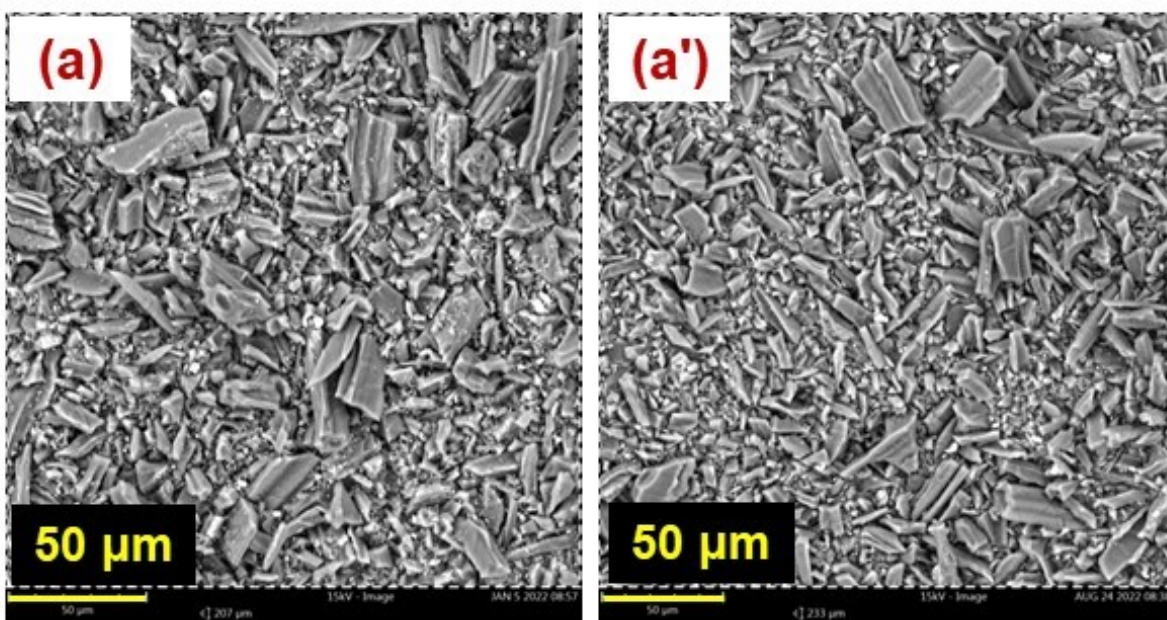
## Upcycling of Waste Jute Biomass to Advanced Biocarbon Materials: Effect of Pyrolysis Temperature on their Physicochemical and Electrical Properties

Neelima Tripathi<sup>a,b</sup>, Arturo U. Rodriguez<sup>a,b</sup>, Haftom Weldekidan<sup>a,b</sup>, Manjusri Misra<sup>a,b</sup> and

Amar K. Mohanty<sup>a,b,\*</sup>

### Supporting Information 1

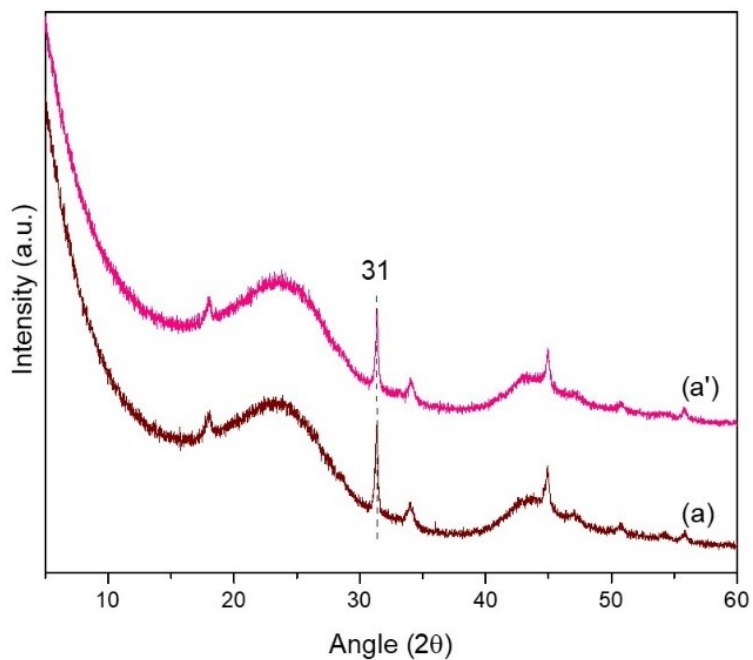
To check the effect of maximum pressure (9 kg load) used in electrical conductivity, on analyses such as SEM, XRD and BET were conducted for pyrolyzed biocarbon at 1000°C. SEM, XRD and BET analyses of 1000°C sample before and after being subjected to the maximum pressure (i.e., 9 kg) that is applied in electrical conductivity test is studied. The SEM analysis revealed no change in surface morphology even after compressing with 9 kg load. In addition to that, crystallinity of the biocarbon sample is also unaffected before and after applying pressure. Slight increase in specific surface area is observed this may be due to the interparticle packing of the biocarbon particles.



**S1. Effect of Pressure on the Surface Area of the Burlap Biocarbon pyrolyzed at 1000 °C**

**Figure S1.** Surface morphology of burlap biocarbon samples carbonized at 1000 °C (a) not compressed; (a') compressed with 9 kg weight.

## S2. Effect of Pressure on the Interlayer Spacing of the Burlap Biocarbon pyrolyzed at 1000 °C



**Figure S2.** XRD spectra of burlap biocarbon samples carbonized at 1000 °C (a) not compressed; (a') compressed with 9 kg weight.

**Table S1.** Physicochemical properties of burlap biocarbon pyrolyzed at 1000 °C.

Burlap Biomass Carbonization Temperature (°C)	BET	XRD	
	Surface Area (m <sup>2</sup> /g)	Peak Position (2θ)	d-spacing (Å)
1000	7.27	31.34	2.85
1000 (Compressed with 9 kg)	21.41	31.33	2.85