Activated carbon, also called activated charcoal or activated coal, is a form of carbon that has been processed to make it extremely porous and thus to increase the numbers & dimensions of pores & hence it has large internal surface area. The word activated in the name is sometimes substituted by active. Due to its high degree of micro porosity, just one gram of activated carbon has a surface area in excess of 500 m², as determined typically by nitrogen gas adsorption. Sufficient activation for useful applications may come solely from the high surface area, though further chemical treatment often enhances the adsorbing properties of the material. Activated carbon is usually derived from charcoal. Activated Carbon has the ability to capture gas molecules and hold them. The carbon surface is made up of millions of tiny pores, the gas and odors fall into these pores and are trapped there until the pad is disposed. Other methods to get reduce of odors such as sprays only fool your sense of smell - the odors still exist. Activated carbon is used in sugar industries for the removal of colorants from sugar liquor and for treatment of drinking water and industrial wastewater. Coal is a commercially used as activated carbon, which is a limited non renewable resource. Sugarcane Bagasse is a poor adsorbent of organic compound such as sugar colorants and metal ion. Bagasse must be modified physically and chemically to enhance its adsorptive properties towards organic molecules or metal ions, routinely found in water and wastewater. This is effectively accomplished by converting Bagasse to an activated carbon. Bagasse is reported as a suitable resource for preparation of activated carbon. The present study is focused on production of Granular Activated Carbon (GAC) from sugarcane Bagasse by activating at different temperatures, using molasses as a binder. Since the commercial application of activated carbon is effected by their physical and chemical properties. The objective of this study was to produce activated carbons from sugarcane bagasse, characterize them i.e Adsorption capacity in terms of iodine and decolorizing power.

1. INTRODUCTION
Activated carbon is an invaluable adsorbent used extensively in industries such as food processing, pharmaceuticals, chemical, petroleum, mining, nuclear, automobile and vacuum manufacturing to purify, decolorize, deodorize, dechlorinate, detoxicate, filter, recover salts and used as catalysts and catalysts supports. Granular and powder activated carbons are produced commercially from precursor materials such as anthracite and bituminous coal, lignite, peat, wood, coconut shells, and nutshell. Activated carbons are manufactured chemically or physically or by using a combination of both these methods.

Activated Carbon is a porous form of carbon which is manufactured from various carbonaceous raw materials like Pine wood, Coconut shell, Coal, Eucalyptus, Peat, Saw dust, Rice husk, Lignite etc. It is prepared through Carbonization & Activation of Organic substance. During Carbonization most of non-carbon elements, Hydrogen, Oxygen are first removed in Gaseous form & it develops the internal pores and then after it is activated through Chemical Activation or Steam Activation. In Activation process, it increases the numbers & dimensions of Pores & hence it has large internal surface area. Activated carbon, also called activated charcoal or activated coal, is a form of carbon that has been processed to make it extremely porous and thus to have a very large surface area available for adsorption or chemical reaction.

The word activated in the name is sometimes substituted by active. Due to its high degree of micro porosity, just one gram of activated carbon has a surface area in excess of 500 m², as determined typically by nitrogen gas adsorption. Sufficient activation for useful applications may come solely from the high surface area, though further chemical treatment often enhances the adsorbing properties of the material. Activated carbon is usually derived from charcoal. Activated Carbon has the ability to capture gas molecules and hold them. The carbon surface is made up of millions of tiny pores, the gas and odors fall into these pores and are trapped there until the pad is disposed. Other methods to get reduce of odors such as sprays only fool your sense of smell - the odors still exist. Activated carbon is used in sugar industries for the removal of colorants from sugar liquor and for treatment of drinking water and industrial wastewater. Coal is a commercially used as activated carbon, which is a limited non renewable resource. Sugarcane Bagasse is a poor adsorbent of organic compound such as sugar colorants and metal ion. Bagasse must be modified physically and chemically to enhance its adsorptive properties towards organic molecules or metal ions, routinely found in water and wastewater. This is effectively accomplished by converting Bagasse to an activated carbon. Bagasse is reported as a suitable resource for preparation of activated carbon. The present study is focused on production of Granular Activated Carbon (GAC) from sugarcane Bagasse by activating at different temperatures, using molasses as a binder. Since the commercial application of activated carbon is effected by their physical and chemical properties. The objective of this study was to produce activated carbons from sugarcane bagasse, characterize them i.e Adsorption capacity in terms of iodine and decolorizing power.

2. MATERIALS AND METHOD
2.1. MATERIALS
1. The sugarcane bagasse was obtained from sugarcane juice center.
2. Sand
3. Mud
4. Different size steel Containers
5. Mesh
6. Muffle Furnace

2.2. METHOD:
RAW MATERIAL PREPARATION
As-received sugarcane bagasse was dried at 110°C to remove moisture and crushed for 15 minutes in a food processor giving rise to bagasse particles with the average size distribution.
EXPERIMENTAL PROCEDURE
Take a container of any size. Make first layer of sand in it and then another layer of sugarcane bagasse and then again make a layer of sand and then covered it with the help of mud. The totally complete batch is put into the muffle furnace for 4-5hrs to achieve the temperature up to 800°C. After achieving this temperature keep the batch for cooling. After cooling separate each layer. The carbon which is formed in the middle of layers is screened with the help of mesh.

3. RESULT AND DISCUSSION
After forming the carbon we have made some tests on it in Qualichem laboratory Nagpur as shown in Table-1.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Sample No.</th>
<th>Adsorption capacity in terms of iodine</th>
<th>Decolorizing power</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sample 1</td>
<td>255.3 mg/gm</td>
<td>22.85 mg/gm</td>
</tr>
<tr>
<td>2</td>
<td>Sample 2</td>
<td>205.53 mg/gm</td>
<td>25.13 mg/gm</td>
</tr>
</tbody>
</table>
4. CONCLUSION
Using sugarcane bagasse as a parent material in the manufacture of activated carbons produces unique activated carbons having excellent decolorizing capacity. The quality of the activated carbon produced depends on the method and processing conditions such as heating rate, temperature, hold-time and activating medium. Increasing the activation temperature increases the degree of activation in a shorter time. The granular activated carbons can be produced, and can be used for continuous systems.

REFERENCES