

**VIDEOS LINK**

Additional Information

For

**(LECTURE-1 TO LECTURE-10)****BIORESOURCE TECHNOLOGY****(ChBC-82)**

Lectures	S. No.	Videos Link
<b>Lecture-1</b>		<b>Bioresources # Bioresource Technology</b>
	1.	<a href="https://www.youtube.com/watch?v=mhiaJg8498">https://www.youtube.com/watch?v=mhiaJg8498</a> (AIT - Bioresources- Australian Institute Technology)
	2.	<a href="https://www.youtube.com/watch?v=P5YRSZiurAM">https://www.youtube.com/watch?v=P5YRSZiurAM</a> (Introduction to Bioresource Technology Part 1, USM )
	3.	<a href="https://www.youtube.com/watch?v=86YVf2BpO-g">https://www.youtube.com/watch?v=86YVf2BpO-g</a> (Introduction to Bioresource Technology Part 2, USM)
	4.	<a href="https://www.youtube.com/watch?v=JDx2JmEkvKw">https://www.youtube.com/watch?v=JDx2JmEkvKw</a> (Introduction to Bioresource Technology Part 3, USM)
<b>Lecture-2</b>		<b>Biomass: A sinifican bioresource</b>
	1.	<a href="https://www.youtube.com/watch?v=dQ-clVJuDks">https://www.youtube.com/watch?v=dQ-clVJuDks</a> (What is Biomass- Fair Energy, UK)
	2.	<a href="https://www.youtube.com/watch?v=-jln6yi7LF0">https://www.youtube.com/watch?v=-jln6yi7LF0</a> (How biomass works - Howarth Timber, UK)
	3.	<a href="https://www.youtube.com/watch?v=-CvjDw9f9ZI">https://www.youtube.com/watch?v=-CvjDw9f9ZI</a> (All about biomass - Admin GWRC, New Zealand)
	4.	<a href="https://www.youtube.com/watch?v=rPI7XqxiLo">https://www.youtube.com/watch?v=rPI7XqxiLo</a> (Biomass Basics - Bioenergy KDF Channel, USA)
<b>Lecture-3</b>		<b>Biomass Conversion Technologies</b>
	1.	<a href="https://www.youtube.com/watch?v=Uo-6AjCpKJ4">https://www.youtube.com/watch?v=Uo-6AjCpKJ4</a> (Biomass Conversion Technol.- Prof. Mainak Das, NPTEL, IIT Kanpur)
	2.	<a href="https://www.youtube.com/watch?v=5YbA8PZEtfU">https://www.youtube.com/watch?v=5YbA8PZEtfU</a> (Biomass conversion Technologies - Agrawat Vishal)
<b>Lecture-4</b>		<b>Biomass Combustion</b>
	1.	<a href="https://www.youtube.com/watch?v=EhkUwq6dafY">https://www.youtube.com/watch?v=EhkUwq6dafY</a> (Combustion Process - Prof. Mainak Das, NPTEL IIT Kanpur)
	2.	<a href="https://www.youtube.com/watch?v=XO8Ha6B0vZI">https://www.youtube.com/watch?v=XO8Ha6B0vZI</a> (Combustion Process Technology - Biofuels Academy, USA)
	3.	<a href="https://www.youtube.com/watch?v=AcrdqxGzcc8">https://www.youtube.com/watch?v=AcrdqxGzcc8</a> (Biomass Combustion and Thermal Conversion Technology Development, Mikko Hupa Abo Akademi University, Finland-36th International Symposium on Combustion)

Lectures	S. No.	Videos Link
<b>Lecture-5</b>		<b>Biomass Pyrolysis</b>
	1.	<a href="https://www.youtube.com/watch?v=Ut3I7OIPFR8">https://www.youtube.com/watch?v=Ut3I7OIPFR8</a> (Process of Pyrolysis - Biofuels Academy, USA)
	2.	<a href="https://www.youtube.com/watch?v=3K1zWAYDvMA">https://www.youtube.com/watch?v=3K1zWAYDvMA</a> (Biomass Pyrolysis Process)
	3.	<a href="https://www.youtube.com/watch?v=3v3UYaHRB6c&amp;t=48s">https://www.youtube.com/watch?v=3v3UYaHRB6c&amp;t=48s</a> (Biomass Pyrolysis Process- Prof. Mainak Das, NPTEL, IIT Kanpur)
	4.	<a href="https://www.youtube.com/watch?v=lvZFfx7XhQE&amp;t=3s">https://www.youtube.com/watch?v=lvZFfx7XhQE&amp;t=3s</a> (Thermochemical Conversion of Biomass to Biofuels via Pyrolysis- Bioenergy KDF Channel, USA)
<b>Lecture-6</b>		<b>Biomass Gasification</b>
	1.	<a href="https://www.youtube.com/watch?v=zj76jhzDE8&amp;t=579s">https://www.youtube.com/watch?v=zj76jhzDE8&amp;t=579s</a> (Introduction of Gasification- Prof. Mainak Das, NPTEL, IIT Kanpur)
	2.	<a href="https://www.youtube.com/watch?v=KENDDXJL2GE&amp;t=395s">https://www.youtube.com/watch?v=KENDDXJL2GE&amp;t=395s</a> (Thermo Chemical Process of Biomass Gasification-Prof. Mainak Das, NPTEL, IIT Kanpur)
	3.	<a href="https://www.youtube.com/watch?v=RVhYGzwnQvE">https://www.youtube.com/watch?v=RVhYGzwnQvE</a> (Low Cost Renewable Energy Power Plant - Biomass gasifier)
	4.	<a href="https://www.youtube.com/watch?v=15bVXLrBW2o">https://www.youtube.com/watch?v=15bVXLrBW2o</a> (NECER Biomass Gasification Technology- USA)
	5.	<a href="https://www.youtube.com/watch?v=kl7s6IRpOHA">https://www.youtube.com/watch?v=kl7s6IRpOHA</a> (Thermochemical Conversion of Biomass to Biofuels via Gasification- Bioenergy KDF channel - U.S. Department of Energy's Bioenergy Technologies)
<b>Lecture-7</b>		<b>Biochemical Conversion/ Anaerobic Digestion</b>
		<b>Biochemical Conversion</b>
	1.	<a href="https://www.youtube.com/watch?v=bCvQp81ct8Q">https://www.youtube.com/watch?v=bCvQp81ct8Q</a> (Biochemical Conversion Process-ATEEC, USA) (ATEEC: Advanced Technology Environmental Education Centre)
	2.	<a href="https://www.youtube.com/watch?v=ziYKhp3Clm0">https://www.youtube.com/watch?v=ziYKhp3Clm0</a> (Biochemical Conversion of Biomass to Biofuels-Bioenergy KDF Channel, USA)
		<b>Anaerobic Digestion</b>
	1.	<a href="https://www.youtube.com/watch?v=DQJ_03hoQPU">https://www.youtube.com/watch?v=DQJ_03hoQPU</a> (Anaerobic Digestion Animation - Recycle 4 Wales, UK)
	2.	<a href="https://www.youtube.com/watch?v=aULRryCVMYy">https://www.youtube.com/watch?v=aULRryCVMYy</a> (The Anaerobic Digester at MSU-Michigan State University, USA)
	3.	<a href="https://www.youtube.com/watch?v=IGPEP9EZU3Y">https://www.youtube.com/watch?v=IGPEP9EZU3Y</a> (Anaerobic Digestion Technologies and Operation- MSW Management, Christian Zurbugg, Switzerland)

Lectures	S. No.	Videos Link
		<b>Fermentation</b>
	1.	<a href="https://www.youtube.com/watch?v=ctNrVfXzw9o">https://www.youtube.com/watch?v=ctNrVfXzw9o</a> ( Process of Fermentation - Biofuels Academy, USA)
	2.	<a href="https://www.youtube.com/watch?v=FYCICHVT00M">https://www.youtube.com/watch?v=FYCICHVT00M</a> (Fermentation of Yeast & Sugar - The Sci Guys: Science at Home, USA)
	3.	<a href="https://www.youtube.com/watch?v=A9BB-A2uc0I">https://www.youtube.com/watch?v=A9BB-A2uc0I</a> (Bioethanol Production from Rice Straw- The Technology)
	4.	<a href="https://www.youtube.com/watch?v=E4mdKIWndHA">https://www.youtube.com/watch?v=E4mdKIWndHA</a> (Ethyl alcohol manufacturing by Molasses Fermentation- Science & Eng.,
<b>Lecture-8</b>		<b>Biogasification of Bioresource</b>
	1.	<a href="https://www.youtube.com/watch?v=NNpvtKhwlMc">https://www.youtube.com/watch?v=NNpvtKhwlMc</a> (Biogasification: Dr. Yogalaxmi K.N., Central University of Punjab, MHRD, UGC)
	2.	<a href="https://www.youtube.com/watch?v=uv3rEXCboTO">https://www.youtube.com/watch?v=uv3rEXCboTO</a> (How does a biogas plant works - Fortuna Pix, USA)
<b>Lecture-9</b>		<b>Single Cell Proteins (SCP)</b>
	1.	<a href="https://www.youtube.com/watch?v=f1577X8zyp4">https://www.youtube.com/watch?v=f1577X8zyp4</a> (Production of Single Cell Protein- Dr. Vidya Mitra, MHRD, UGC)
	2.	<a href="https://www.youtube.com/watch?v=YSof7MyGF8&amp;t=88s">https://www.youtube.com/watch?v=YSof7MyGF8&amp;t=88s</a> (Production Process of SCP in Hindi)
	3.	<a href="https://www.youtube.com/watch?v=4yW2wCbEpYA">https://www.youtube.com/watch?v=4yW2wCbEpYA</a> (Spirulina (SCP) Commercial Production- Parry Neutraceuticals, Tamil Nadu)
<b>Lecture-10</b>		<b>Penicillin (Lecture note awaited)</b>
	1.	<a href="https://www.youtube.com/watch?v=Mn2B0LgqZwA">https://www.youtube.com/watch?v=Mn2B0LgqZwA</a> (Commercial Prod. of Penicillin- Dr. Shweta Hardia, UGC, MHRD)
	2.	<a href="http://www.youtube.com/watch?v=HOZZWXSH7OE">www.youtube.com/watch?v=HOZZWXSH7OE</a> (Fermentative production of penicillin-Chriast College Rajkot)