

1-1-2016

23.0.A Daily Outline

Christopher F. Bauer

University of New Hampshire, chris.bauer@unh.edu

Follow this and additional works at: <https://scholars.unh.edu/day23>

Recommended Citation

Bauer, Christopher F., "23.0.A Daily Outline" (2016). *Day 23*. 1.
<https://scholars.unh.edu/day23/1>

This Report is brought to you for free and open access by the Fire and Ice at University of New Hampshire Scholars' Repository. It has been accepted for inclusion in Day 23 by an authorized administrator of University of New Hampshire Scholars' Repository. For more information, please contact nicole.hentz@unh.edu.

RECORDER REPORT, Chem 444A "Fire & Ice"

Group Member Name

Role

Date: 4/16/15

Sean Spokesperson

Mandy Manager

Becky Reflector

Miriam Recorder

Combustion is when fuel reacts with oxygen in air to produce heat. It relates to crude oil because crude oil is the fossil fuel that reacts.

Remains of animals and plants covered by mud, which becomes rock. Pressure from rock turns remains into oil.

Crude oil is used as gasoline. "Cracked" - high pressures & temperature make crude oil into gasoline and remove impurities.

Crude oil is toxic to most living organisms. Burning gasoline releases lots of different components into the air.

Society makes gasoline very necessary.

RECORDER REPORT, Chem 444A "Fire & Ice"

Group Member Name

Role

Date: April 16, 2015

<u>Mansa</u>	<u>Manager</u>
<u>Nick</u>	<u>Spokesperson</u>
<u>Taylor</u>	<u>Spokesperson</u>
<u>Jake</u>	<u>Reflector</u>
<u>Amanda</u>	<u>Recorder</u>

1) Combustion is when a fossil fuel reacts with oxygen to produce heat. It relates to our topic because biodiesel burns like diesel.

2) It is made from oils and fats and use a chemical process called transesterification where glycerin is separated from the fat or vegetable oil.

3) Biodiesel mixed with air then compressed into combustion chamber. The mixture is compressed and spark plug provides a spark. Spark ignites the fuel causing explosive forces to push piston down which generates mechanical energy. Then the piston moves back up pushing gases out of the cylinder.

4) It decreases CO_2 and sulfur dioxide. It is clean and renewable. It causes deforestation and it increases nitrous oxides. Cheaper price.

RECORDER REPORT, Chem 444A "Fire & Ice"

Group Member Name

Role

Date: April 16, 2015

Kaleigh

Recorder

Charles

Manager

Heather

Spokesperson

Samantha

Reflector

-
- 1) Combustion occurs when fuel reacts with oxygen in the air to produce heat. Carbon dioxide and water are byproducts of this process. Combustion relates to natural gas in the use of furnaces where this gas and air combine in the combustion chamber, where the mixture is ignited.
 - 2) Natural gas is created by the breakdown of prehistoric marine zooplankton.
 - 3) Natural gas is burned in the process of residential heating. There is a constant ignition source located in the burner. The air and the gas go into the combustion chamber, causing the lighting of the pilot light, starting the heating cycle. This controlled fire continues to burn within the chamber. The heat exchanger absorbs the heat and fans blow the heat into the heat ducts, thus heating the home.
 - 4) The fracking process releases toxic chemicals, which can contaminate water and put agriculture in danger.

RECORDER REPORT, Chem 444A "Fire & Ice"

Group Member Name

Role

Date: 4/16/15

Emily Spokesperson

Tim Reflector

Emma Manager

Eliza Recorder

-
- 1) Combustion is when (fossil) fuels react with oxygen to produce heat. This allows for coal to produce energy.
 - 2) Coal is formed by geological heat and pressure for a long period of time. It is extracted from the surface or underground mines and cleared and transported.
 - 3) It is crushed into a fine powder, mixed with hot air and blown into a boiler where the most complete combustion occurs. The heat from combustion turns the water into steam. The power from the steam powers the turbine which powers the generator to create electricity.
 - 4) Coal gives off major CO_2 emissions which contribute to greenhouse gases and global warming. To produce the energy from coal, energy is necessary to pulverize the coal for combustion. It also disturbs the land around it. The oxides emitted from coal affect human health and air quality.

RECORDER REPORT, Chem 444A "Fire & Ice"

Group Member Name

Role

Date: April 10

Emily Koester Recorder

Kyle B Reflector

Jon T Manager

Catie Frost Spokesperson

TASK 1

① Combustion is the process that occurs when fuel and oxygen combine and produce heat and waste products. Hydrogen fuel replaces the internal combustion engine and results in water as a waste product, which is better for the environment.

② Hydrogen fuel is created through ^{Steam-}methane reformation, in which methane is exposed to high temperature steam. Hydrogen gas is formed, in addition to CO_2 and CO . Then, the products are separated.

③ Hydrogen and oxygen gas are ~~released~~ released into the fuel cell. Their interaction generates electrical energy, which is transferred across the cell to power the vehicle.

④ The use of hydrogen fuel itself is good for the environment because the end product (H_2O) is not harmful. However, the production requires natural gas, which results in CO_2 and CO . It is also expensive, which negatively impacts the environment and society. In addition, hydrogen fuel ~~is~~

is explosive and challenging to store. This poses a threat
to society and the environment as well.

Christopher F. Bauer, Principal Investigator.

This material is based upon work supported by the National Science Foundation under Grant No. 1245730.

Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Licensed: <http://creativecommons.org/licenses/by-nc-sa/3.0/>