Next Generation Fire Retardant

I. Abstract

Our vision is to create a type of coolant substance that is not harmful to wildlife, it would work at preventing fires from starting and it could contain a fire after it just started right away, and this substance would be non flammable.

California, Oregon and Washington had several wildfires and the people who lived there had to evacuate the homes and businesses. The recent wildfires in the Pacific Northwest had burned 3,627,010 acres and 26 deaths as of September 26th, 2020 and 7,196 structures damaged or destroyed.

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II. Description

1. Present Technology

Right now there are drones that are used to battle wildfires that can be fitted with both regular and thermal imaging and can fly in areas that manned aircrafts can't. Right now there are also firefighting robots often wildfires get so that humans can't put them out so firefighters came out with wildfire robots who can put them out.

In 2013, The University of California Berkeley had a team working on a project called, "Fire Urgency Estimator in Geosynchronous Orbit (Fuego)". These systems include both satellites and drones to monitor wildfires at an early stage before they become too out of control. There is something called a control fire, that is when a fireman lights bushes on fire near the fire then puts them out so when the fire gets to that spot there is nothing for the fire to burn, so it dies out.

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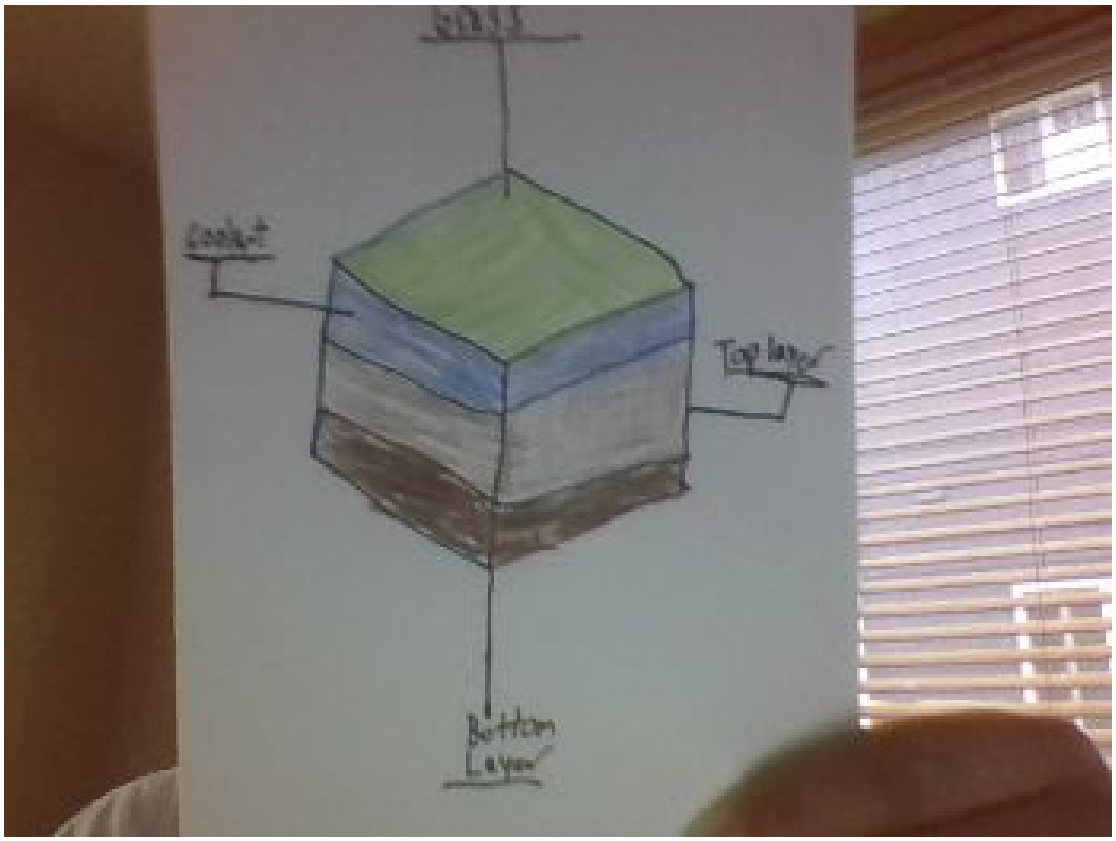
2. **History:**

In the past there has been this fire repellent called fire retardant used to extinguish wildfires. Fire retardant was invented in 1912 by someone named William Henry Perkins. There are limitations with fire retardant though. For example, the amount is only limited to one medium sized area. In most cases this is effective, but sometimes it is not. This new way of extinguishing fires will be crucial to the environment to stop and prevent wildfires. There are usually over 60,000 wildfires and they burn about 6.8 million acres every year which is not good for the planet. This device will substantially lessen the amount of annual fires and help protect the biosphere.

3. **Future Technology:**

In the future, we would like the whole forest to be covered in this non-flammable substance so that forest fires and animal habitats will not be destroyed. This will be a liquid substance that is ECO friendly and that is super light.



4. **Breakthroughs**:**

There is already a non flammable substance but it is not ECO Friendly. The goal we have is to make this ECO friendly, maybe using different substances. We would need breakthroughs in the substance to ensure the liquid can stop fires from going any farther and put it out.

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5. **Design Process**:**

I learned that fires need heat, fuel, and oxygen. The way fire retardant works is it removes the heat and coats the surface so it can't find oxygen. This new fire retardant will coat an entire forest so it doesn't burn, plus it will last for a very long time.

6. **Consequences**

There are always pros and cons for any invention. For example, the pros of our new technology is that it will help protect the environment from wildfires, and a con is that it will be heavier than regular water but instead of water it will use a different substance.

III. Bibliography:

https://www.mentalfloss.com/article/57094/10-strategies-fighting-wildfires

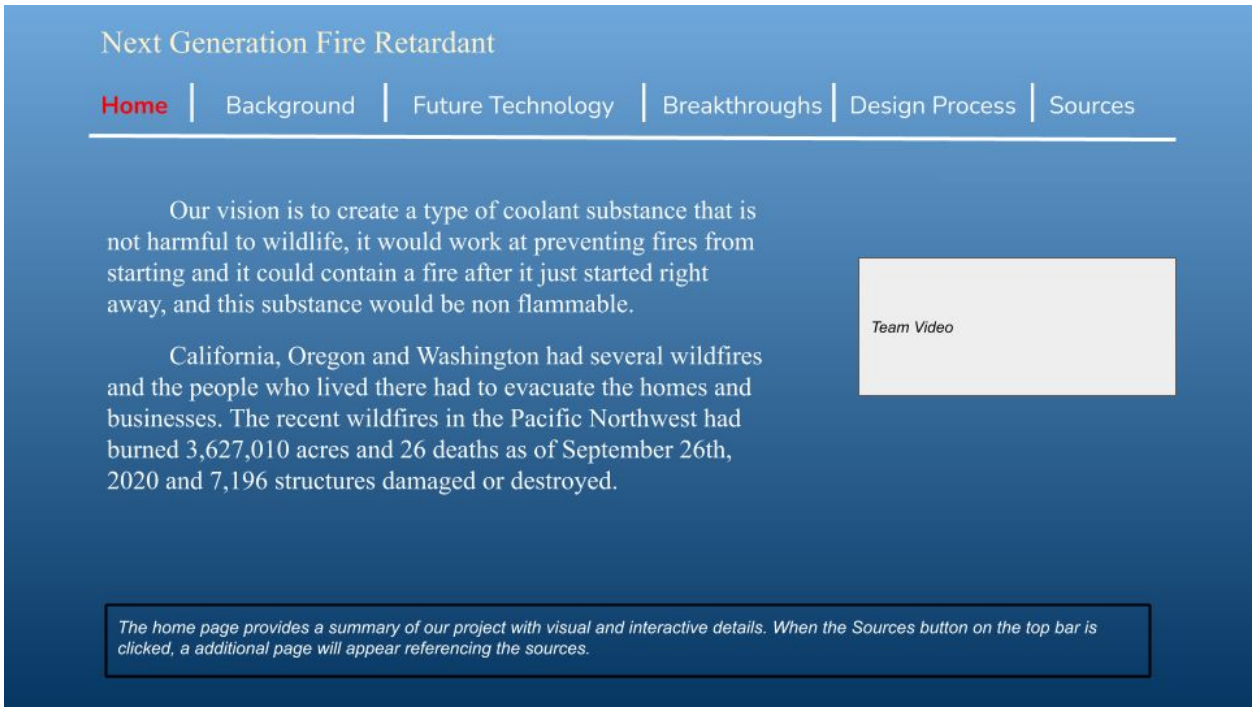
https://www.orange-business.com/en/magazine/5-digital-technologies-to-help-fight-wildfires

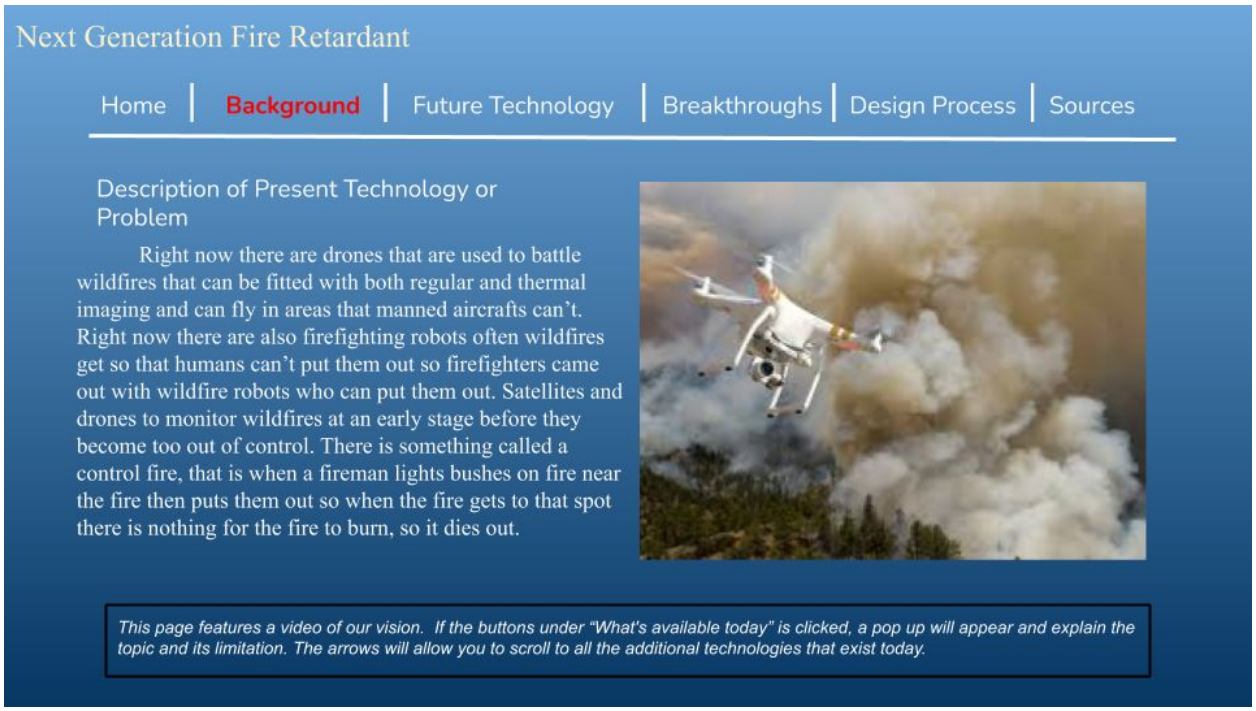
https://www.vox.com/21431313/california-oregon-washington-wildfires-2020-weather-climate-covid

https://www.sciencedirect.com/topics/engineering/fire-retardant

https://media1.s-nbcnews.com/i/newscms/2017_46/2226401/171114-wildfire-drone-mn-1600_4de600d372548c7a84554b27ac193ab8.jpghttps://www.pe.com/wp-content/uploads/migration/ob3/ob3qy1-b88763302z.120160729173246000gekhsojb.10.jpg

IV. Sample Web Pages





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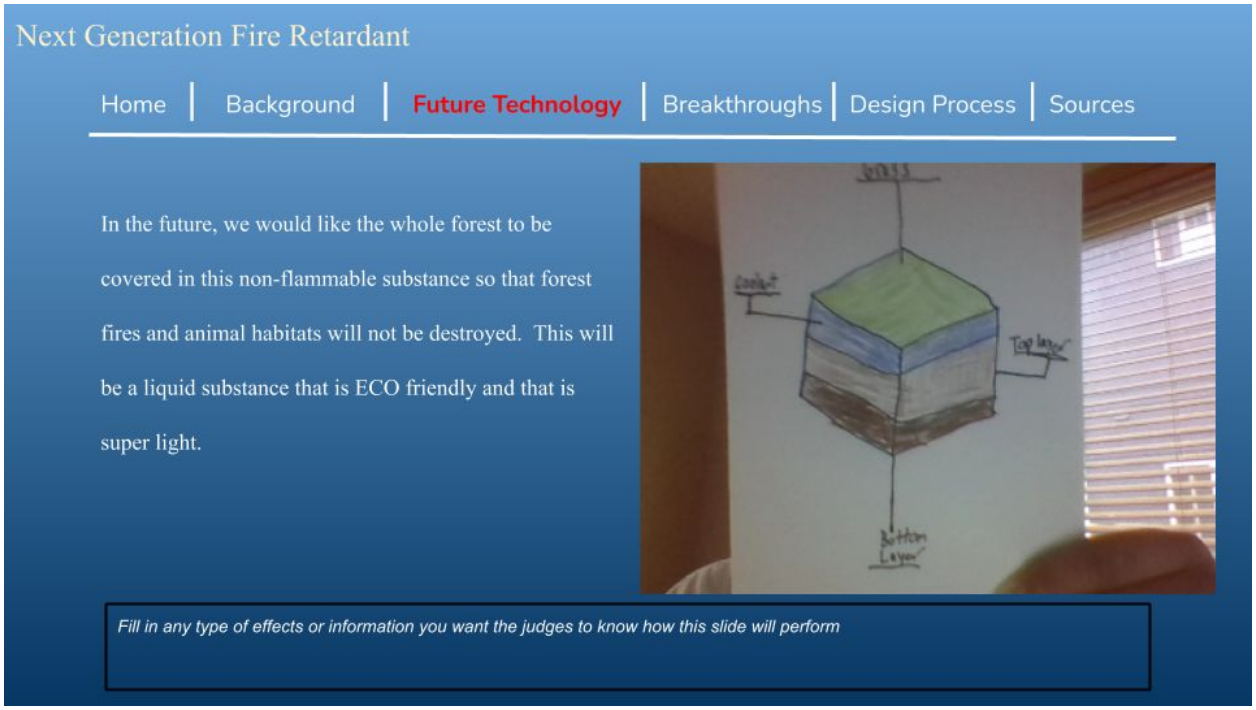

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Describe any special effects

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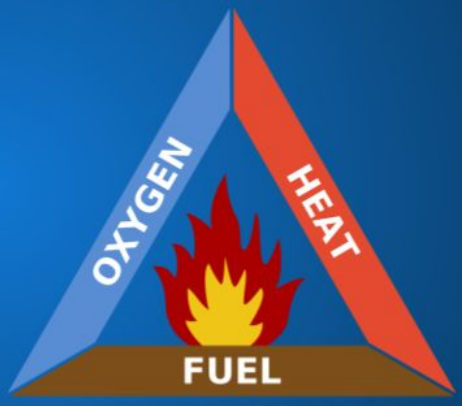

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