

Experiments conducted in the early 20th Century by scientists including R.W. Wood and Niels Bohr proved that "greenhouse" gases like CO2 cannot increase air temperature by "trapping" infrared radiation. The results of R.W. Wood's research were published in Philosophical magazine , 1909, vol 17, p319-320 - back when science relied on experiments, not computer models. Four years later Niels Bohr reported his discovery that the absorption of specific wavelengths of light didn't cause gas atoms/molecules to become hotter. Empirical science proves that CO2 will not warm our atmosphere by trapping IR. The Earth will continue to warm and cool according to the natural cycles of the sun, the oceans, volcanism, orbital variations, and numerous other natural factors. The 0.038 percent concentration of CO2 in the atmosphere is a drop in the bucket and totally irrelevant and insignificant.

Greenhouse Theory Disproved a Century Ago

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The claim that carbon dioxide (CO2) can increase air temperatures by "trapping" infrared radiation (IR) ignores the fact that in 1909 physicist [R.W. Wood](#) disproved the popular 19th Century thesis that greenhouses stayed warm by trapping IR. Unfortunately, many people who claim to be scientists are unaware of Wood's experiment which was originally published in the [Philosophical magazine , 1909, vol 17, p319-320](#).

Wood was an expert on IR. His accomplishments included inventing both IR and UV (ultraviolet) photography.

Wood constructed two identical small greenhouses. The description implies the type of structure a gardener would refer to as a "coldframe" rather than a building a person could walk into.

He lined the interior with black cardboard which would absorb radiation and convert it to heat which would heat the air through conduction. The cardboard would also produce radiation. He covered one greenhouse with a sheet of transparent rock salt and the other with a sheet of glass. The glass would block IR and the rock salt would allow it to pass.

During the first run of the experiment the rock salt greenhouse heated faster due to IR from the sun entering it but not the glass greenhouse. He then set up another pane of glass to filter the IR from the sun before the light reached the greenhouses.

The result from this run was that the greenhouses both heated to about 50 C with less than a degree difference between the two. Wood didn't indicate which was warmer or whether there was any difference in the thermal conductivity between the glass sheet and the rock salt. A slight difference in the amount of heat transferred through the sheets by conduction could explain such a minor difference in temperature. The two sheets probably didn't conduct heat at the same rate.

The experiment conclusively demonstrates that **greenhouses heat up and stay warm by confining heated air rather than by trapping IR**. If trapping IR in an enclosed space doesn't cause higher air temperature than CO2 in the atmosphere cannot cause higher air temperatures.

The heated air in the greenhouses couldn't rise higher than the sheets that covered the tops of the greenhouses. Heated air outside is free to rise allowing colder air

to fall to the ground.

Atmospheric CO₂ is even less likely to function as a barrier to IR or reflect it back to reheat the ground or water than the sheet of glass in Wood's greenhouse.

The blackened cardboard in Wood's greenhouses was a very good radiator of IR as is typical of black substances. The water that covers 70% of earth's surface is a very poor radiator and produces only limited amounts of IR as is typical of transparent substances. Water releases heat through evaporation rather than radiation.

The glass sheet provided a solid barrier to IR. Atmospheric CO₂ is widely dispersed comprising less than 400 parts per million in the atmosphere. Trapping IR with CO₂ would be like trying to confine mice with a chain link fence.

Glass reflects a wider spectrum of IR than interacts with CO₂. The glass sheets reflected IR back toward the floor of the greenhouse. CO₂ doesn't reflect IR.

At the time of Wood's experiment, it was believed that CO₂ and other gas molecules became hotter after absorbing IR.

Four years later **Niels Bohr** reported his discovery that the absorption of specific wavelengths of light didn't cause gas atoms/molecules to become hotter. Instead, the absorption of specific wavelengths of light caused the electrons in an atom/molecule to move to a higher energy state. After absorption of light of a specific wavelength an atom couldn't absorb additional radiation of that wavelength without first emitting light of that wavelength. ([Philosophical Magazine Series 6, Volume 26 July 1913, p. 1-25](#))

Unlike the glass which reflects IR back where it comes from, CO₂ molecules emit IR up and sideways as well as down. In the time interval between absorbing and reemitting radiation, CO₂ molecules allow IR to pass them by. Glass continuously reflects IR.

Those who claim that CO₂ molecules in the atmosphere can cause heating by trapping IR have yet to provide any empirical scientific evidence to prove such a physical process exists. The experiment by R.W. Wood demonstrates that even a highly reflective covering cannot cause heating by trapping IR in a confined space. There is no way CO₂, which at best only affects a small portion of the IR produced by earth's surface, can heat the atmosphere by trapping IR.

Contrary to the lie repeated in news stories about climate, science doesn't say that CO₂ is causing higher temperatures by trapping IR. Empirical science indicates that no such process exists in this physical