
potentially followed by many others in the near future.” Specialists are planning to increase its capacity to ensure the ability to charge mobile devices, including smartphones. It is assumed that in the future the thermal resonator will allow electrifying remote regions.

As noted, the research was partially funded by the King Abdullah University of Science and Technology (KAUST) of Saudi Arabia. There they intend to use this technology to power the network of environmental sensors in the oil and gas fields. If the project succeeds, thermal resonators will be used in tandem with solar panels, which will provide a completely independent source of energy for the sensors. According to the developers, even if there is a sandstorm, during which solar panels are useless, resonators will be able to support the work. Earlier they wrote that NASA is seriously considering the transfer of mechanical robots with mechanical computers to Venus. Similar development for certain can be useful and there.

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GAS USING FOR PRESERVING AGRICULTURAL PRODUCTS

Carbon dioxide is one of the most important chemical compounds of human, animal, and plant lives, and environmental health. Because of several desirable characteristics of carbon dioxide in gas, solid, liquid, and supercritical states such as inertness, non-explosiveness, non-corrosiveness, high volatility, cooling ability, and low-cost, carbon dioxide is being used in a variety of applications in food and processing industries. Applications of carbon dioxide in preserving fruits, vegetables, meats, food grains, and liquid foods; inactivating microorganisms; and extracting oils, flavors, colors, and chemicals are discussed. Carbon dioxide as high pressure gas and supercritical fluid would find a niche in food and processing industries in the future especially in applications involving non-thermal sterilization and supercritical extraction.

Carbon dioxide (CO₂) is the third-most abundant gas available in the air. CO₂ content of the atmospheric air ranges from 300 to 600 ppm (by volume) depending on the measurement location on the earth. CO₂ is an important constituent in the life cycle of animals and plants. Naturally available CO₂ gas is used in the photosynthesis process by plants that are the basic sources of food. The decay (slow oxidation) of all organic materials gives off CO₂. In the respiratory action (breathing) of all animals and

humans, CO₂ is released during exhalation. Plants also release some amount of CO₂ when they respire during night. CO₂ is cycled through the oceans. CO₂ content of the oceans is about 60 times that of the atmosphere (Jones, 1923a and 1923b). Volcanic eruptions may also release CO₂. In addition, CO₂ is released by a wide variety of industries due to processing and due to the use of fossil fuels such as coal. Though CO₂ is a normal constituent of exhaled air, high concentration of CO₂ gas is hazardous, even lethal. A concentration of 3.5% CO₂ (by volume) in air will cause deeper breathing, and a concentration of 25% CO₂ (by volume) can cause death of humans. Importantly, continued increase of ambient CO₂ content is believed to be the main cause for global warming (i.e., greenhouse effect).

Industrially manufactured CO₂ is used in solid, liquid, gas, and supercritical forms in widely diversified commercial applications such as making explosive gas atmospheres inert, beverage carbonation, chemical manufacturing, fire fighting, food preservation, foundry-mold preparation, greenhouses, mining operations, oil well secondary recovery, rubber tumbling, pH depression for wastewaters, welding, therapeutical work, and medical industry applications. Fossil fuel fired plants are responsible for the one third of the CO₂ emissions which are thought to be a major contributor to the current rise in the earth's surface temperature.

Reducing CO₂ atmospheric concentrations by capturing emissions at the source (power plants and chemical industries) and then storing them in subsurface reservoirs is thought to be a reliable solution. The captured CO₂ could also be utilized for enhanced oil recovery, enhanced coal bed methane recovery, enhanced gas recovery, food processing applications, manufacturing minerals and fertilizer (e.g., urea production), promoting algae growth, and enhanced plant growth in greenhouses. Currently, technologies are available to purify naturally occurring CO₂ into products suitable for the above applications.

When the concentration of CO₂ increases beyond a certain level, it can create a lethal effect on living beings. This property is effectively used to protect grains, fruits, and vegetables from insects. It could be a practical solution to replace the chemical fumigants used in grain industries. Increasing the CO₂ level in the surroundings of food material will prolong their shelf-life with little or no adverse effect on quality. This technique usually named modified atmosphere packaging (MAP) or controlled atmosphere storage (CAS). Previous literature reviews on this topic confirm that MAP and CAS have been successfully tested and practiced in many grains, fruits, vegetables, meats, and some processed food products. Elevated CO₂ atmosphere finds a perfect fit in organic crops for non-chemical preservation technology).[1]

Controlled atmosphere storage of grains was found to maintain/enhance the quality of grains. Sankara Rao and Achaya reported that CO₂ gas storage of oil seeds such as castor, cottonseed, and groundnut would reduce their degradation during storage due to sorption of CO₂ gas by the seeds. Rajendran et al. successfully stored basmati rice under high CO₂ concentration to control red flour beetle (*Tribolium castaneum*). They also found reduced free fatty acid (FFA) formation in rice due to high CO₂ gas storage compared to the control. Modified atmosphere packaging keeps

the fruits and vegetables fresh for months. Also, MAP of fruits delays ripening, and controls the development of toughness in the stored product as well as the spread of diseases. In the USA and Canada, both whole and cut fruit and vegetables are stored and distributed in modified atmosphere packs. Consumers in more advanced countries are ready to pay extra for fruit and vegetables that are sold 'near-fresh' and are stored in chemical free environments. Therefore, MAP will not only enhance the food supply in the domestic markets but also will improve the export earnings. [2]

The list of used literature

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WIND POWER IS A SUSTAINABLE AND RENEWABLE ENERGY

Wind energy is a renewable energy industry that specializes in the use of kinetic wind energy. Wind as an energy source is an indirect form of solar energy and therefore belongs to renewable energy sources. The use of wind energy is one of the oldest known uses of energy from the environment, and has been known since ancient times.

Wind power or wind energy is the use of wind to provide the mechanical power through wind turbines to turn electric generators and traditionally to do other work, like milling or pumping. Wind power is a sustainable and renewable energy, and has a much smaller impact on the environment compared to burning fossil fuels.

Wind farms consist of many individual wind turbines, which are connected to the electric power transmission network. Onshore wind is an inexpensive source of electric power, competitive with or in many places cheaper than coal or gas plants. Onshore wind farms also have an impact on the landscape, as typically they need to be spread