ISSN: 2168-9873
Journal of Applied Mechanical Engineering

OPEN ACCESS Freely available online

Short Communication

Insights of High Energy Radiation on the Mechanical Properties

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DESCRIPTION

Nuclear radiation is any type of energy that can be in the form of electromagnetic waves or else as beams of nuclear particles. Many types of radiation exist in our environment and surround us at all times. Radiation can occur in a variety of forms, including atomic power and radioactive materials however, it is not limited to these forms. Sound waves and sunlight are the most common forms of radiation to us on Earth's surface, other but different forms include the Ultraviolet (U.V.) radiation (part of sunlight for which we need sunscreens), infrared radiation and also the radio/micro-waves responsible for the radio and television signals [1].

Radio waves and electromagnetic light are both considered to be radiation, so the term is quite broad. Ionizing Radiation is composed of subatomic particles or electromagnetic waves powerful enough to separate bound electrons from atoms, ionizing them in the process. Essentially, ionization only occurs as a threshold effect, not as cumulative storage of energy issue, as it depends upon the energy of impinging particles [2]. By interrupting chemical bonds, electrical particles create a variation in organic processes common to live tissues.

Other radiation that does not have sufficient energy to displace particles from an atom or can only cause atoms to vibrate, but its energy is insufficient to eject electrons, is alluded to as "non-ionizing radiation." Some examples of these radiations are sound waves, visible sunlight and microwaves. Low-intensity radioactivity exists in different land components such as soils and rocks, plants, water, and air, which is quite common in our environment. Early-stage sources and cosmogenic radiation are the primary radioactive sources in the environment [3]. Individuals can also be exposed to ionizing radiation through other extra-terrestrial sources, illuminating the environment with high-energy photons and particles. At the same time, there is a danger to human and animal health through the incorporation of radioactive materials into the body through ingestion or inward breath (through food, air and water). When consumed, the radioactive elements circulate in the body and irradiate living tissues around alpha and beta high-energy radiation discharges and gamma-ray photons. Appraisals of all radiation sources have shown that around 96% of radiation received by us is from natural sources, while only 4% is from artificial or anthropogenic sources [4].

Anthropogenic radioactivity is the source we use for testing/medical purposes where radiation dosages are created or required. Clinical X-ray beams, residues of nuclear weapon tests, nuclear wastes from the nuclear industry and industrial gamma beams generate high anthropogenic energy/ionizing radioactivity.

CONCLUSION

Besides, nuclear accidents such as the Chernobyl incident have released radioactive materials like 90Sr, 137Cs, 40K and others in vast amounts in the environment. Anthropogenic radioactivity is not harmless as natural radioactivity. In any case, it is simpler, in most cases, to control artificial sources of radiation since we can adjust or stop the production method that is delivering harmful radiation. Almost all life on Earth evolved in a radiation-filled environment. An examination of the structure of the heaviest of atoms reveals the phenomenon at work. Atoms are one million times smaller than a single human hair and they consist of even smaller particles (sub-atomic particles), including electrically charged particles like electrons.

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Received: 29-Nov-2022, Manuscript No.JAME-22-19530; **Editor assigned:** 05-Dec-2022, Pre QC No. JAME-22-19530 (PQ); **Reviewed:** 19-Dec-2022, QC No JAME-22-19530; **Revised:** 26-Dec-2022, Manuscript No. JAME-22-19530 (R); **Published:** 30-Dec-2022, DOI: 10.35248/2168-9873.22.11.454.

Citation: Joseph S (2022) Insights of High Energy Radiation on the Mechanical Properties. J Appl Mech Eng. 11:454.