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Papers Published in UGC Care List Journals for Session 2024-25

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S. No.	Title of Paper	Name of Author	Title of Journal	Year of Publication	Citation Index	Institution Affiliation
1.	Recent advancements in cathode materials for high performance Li-ion batteries; Progress and Prospects	Dr. Gulshan Kumar	Journal of energy storage	2024	135	Govt. College Baldwara
2.	Depletion of Ozone Layer: Review in reference to galactic radiations	Dr. Gulshan Kumar	Environment conservation Journal	2024	6	Govt. College Baldwara
3.	Impact of Digital Payment Systems on Economic Growth in Developing Countries	Dr. Sunil Kumar	Urban India	2024		Govt. College Baldwara

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UGC Paper

7(i)

Review article

Recent advancements in cathode materials for high-performance Li-ion batteries: Progress and prospects

Shruti Kaushik [a], Tushar Mehta [a], Prakash Chand [a], Swati Sharma [a], Gulshan Kumar [b]

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Highlights

- The history and basic mechanism of Lithium-ion batteries are discussed.
- The review includes a comparative analysis of various

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Depletion of ozone layer: Review in reference to galactic radiations

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ABSTRACT

This review work represented the effect of various galactic activities, including so cycles and some key elements of environmental pollution, in the variation of the to ozone column of the earth's atmosphere. The various observations works by vario researchers worldwide, including the data spared by various international agenc are reviewed; the research design is based on the fact that measurable dissociat rates have been reported by various researchers due to the interaction of highly en getic charged contents of the galactic radiations with ozone with the fact that a wa length of radiation and energy of 5 eV is required for its photolysis. In 2003, searchers reported an event that caused ozone depletion in the mesosphere to re up to 80%. Based on the charge content of galactic radiations and solar flares in earth's crust's magnetic field, it was decided that charged particles move toward poles according to Fleming's left-hand rule. This means that the particle intens changes with latitude, reaching its highest point near the earth's poles. Therefore, depletion of ozone in stratospheric space over the poles is primarily influencedDue its lower population density, the southern hemisphere experiences a significant lease of greenhouse gases, which exacerbates the ozone column's depletion, indicat a greater role for natural causes such as galactic interference.ible for its depletion.

Introduction

As evident from various spectroscopic studies, ozone is a well-established triatomic allotrope of oxygen molecule (Gerhard, 1932). Even with its lower concentration in the atmosphere (1 mg/m³), it has a crucial role in protecting us from UV solar radiation (Barbe *et al.*, 2022a). The ozone has a non-homogeneous distribution in the atmosphere; its density increases with elevation from the earth's surface, forming maxima at altitudes of 20–25 kThe discovery of the 'ozone hole' in Antarctica in the 1970s stimulated research activities aimed at exploring the characteristics of ozone. ne. The early studies have resulted in the conclusion that those anthropogenic activities that lead to increased CO2 concentration in the atmosphere may be the cause of ozone layer depletion. As research and technology progressed, NASA's satellite data confirmed that the ozone hole spans the entire Antarctic continent (World Meteorological Organization (WMO), 2022). 2). This critical situation led to the Montreal Protocol, which regulates the production and consumption of nearly 100 man-made chemicals, including chlorofluorocarbons (CFCs), mainly responsible for ozone depletion.

According to the Chapman Cycle (Rowland, 2006), solar UV radiations in the stratosphere (with full absorption of the most energetic fraction of s radiations) create the ozone layer.

$$h\nu + O_2 \rightarrow 2O\cdot$$

$$O_2 + O\cdot \rightarrow O_3$$

$$O_3 + O\cdot \rightarrow 2O_2$$

Ozone can also be recycled into molecular oxy by reacting with photon:

$$O_3 + h\nu \rightarrow O_2 + O\cdot$$

(where the wavelength of UV radiations is less t 240 nm and energy > 5 eV).

$$O_2 + h\nu \rightarrow O + O$$

(where the wavelength of UV radiations is less t 240 nm and energy > 5 eV).

One thing is to be noted only a limited fraction of solar spectrum has the photons of such a h amount of energy. Ozone is produced when one o gen atom and one oxygen molecule colloid in presence of another particle M which could be N O_2

$$O_2 + O + M \rightarrow O_3 + M$$ (Barbe *et al.*, 2022b)

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Doi:https://doi.org/10.36953/ECJ.XXXXX

The anthropogenic release of chlorofluorocarbon (Bouvier *et al.*, 2001).

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Impact of Digital Payment Systems on Economic Growth in Developing Countries (Pages 127-135).pdf

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IMPACT OF DIGITAL PAYMENT SYSTEMS ON ECONOMIC GROWTH IN DEVELOPING COUNTRIES

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ABSTRACT

This study explores the transformative impact of digital payment systems on economic growth in developing countries, with a focus on three key indicators; GDP growth, financial inclusion, and employment rates. Utilizing data from Kenya, India, and Brazil over the period from 2010 to 2023, the research employs a mixed-methods approach, combining quantitative analysis of secondary data with qualitative insights from interviews with stakeholders in the digital payment ecosystem. The quantitative analysis reveals a significant positive correlation between the adoption of digital payment systems and the economic indicators studied. Specifically, increases in digital transaction volumes are closely associated with

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