The origin of optical discs for solar power generation

Who invented optical discs?

Types of Optical Discs: In the Netherlands in 1969,Philips Research physicist,Pieter Kramerinvented an optical videodisc in reflective mode with a protective layer read by a focused laser beam U.S. patent 5,068,846,filed 1972,issued 1991. Kramer's physical format is used in all optical discs.

Who invented optical storage?

A merican inventors including David Paul Gregg and James Russelloriginated some key optical storage concepts in the late 1950s and early 1960s,but initially envisioned writing with electron beams and reading by directing laser beams through the material to detectors on the other side.

Can a Blu-ray Disc help solar cells absorb sunlight?

The Northwestern researchers have demonstrated that a Blu-ray disc's strings of binary code 0s and 1s,embedded as islands and pits to store video information,give solar cells the near-optimal surface texture to improve their absorptionover the broad spectrum of sunlight.

Who invented the erasable digital video disc system?

In the late 1980s and early 1990s,Optex,Inc.of Rockville,MD,built an erasable optical digital video disc system U.S. patent 5,113,387 using Electron Trapping Optical Media (ETOM) U.S. patent 5,128,849.

What are optical discs used for?

Optical discs can store analog information (e.g. Laserdisc),digital information (e.g. DVD),or store both on the same disc (e.g. CD Video). Their main uses are the distribution of media and data,and long-term archival.

When was the first optical disc used for video recording?

An early analog optical disc used for video recording was invented by David Paul Gregg in 1958and patented in the US in 1961 and 1969. This form of optical disc was a very early form of the DVD (U.S. patent 3,430,966).

Photovoltaic (PV) technology has witnessed remarkable advancements, revolutionizing solar energy generation. This article provides a comprehensive overview of the recent developments in PV ...

In addition to Optical Disc Archive Generation 2 development, Sony is also employing these technologies in new systems designed specifically for data centers called Everspan, where explosive growth is expected in coming years. Sony is working to promote the wide use of optical disc systems at large data ... 2.4 Brief History of the Optical Disc .

James T. Russell invented the first optical disc, which could store data as micron-sized light and dark dots.

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Optical disc. An optical disc can store more data and has a longer lifespan than the preceding generation of magnetic storage medium. Optical media is the longest lasting medium currently in production.

SDEVCIE USER GUIDE??????????Optical Generation,????optical absorption?electron-hole generation? ??????????????,??????optical generation???????????: ??,??????????,?????????

The limitation of solar power generation technologies is the diurnal (day and night) and intermittent (hourly, daily, and seasonal) nature of solar radiation. Hence, dispatchability of the solar power generation is poor. ... Optical Efficiency of a solar collector may be defined as the ratio of the solar energy absorbed by the absorber to the ...

2 Development of the New Optical Disc . A new generation of high-capacity optical discs, developed jointly by Sony and Panasonic, serves as the storage media for Generation 2 of the Optical Disc Archive. Sony has also developed the world"s first 8-Channel Optical Drive Unit for this system--offering very fast read/write speeds, fully capable ...

Several attempts and proposed concepts to use optical fibers with concentrated solar energy were reported (Kato and Nakamura, 1976, Cariou et al., 1982, Cariou et al., 1985, Khatri et al., 1993, Nakamura et al., 1995, Liang et al., 1997, Peill and Hoffmann, 1997, Feuermann and Gordon, 1998a, Feuermann and Gordon, 1998b).However, these attempts ...

Solar energy is a promising form of energy that has the potential to meet all of the world"s energy needs. Only half of the sun"s energy reaches the earth"s surface, even though it is more enough for meeting the world"s energy need. Though there is a great deal of solar energy utilization technologies available, solar parabolic dish collector system got researchers ...

Dish Stirling systems have demonstrated the highest efficiency of any solar power generation system by converting nearly 30% of direct normal incident (DNI) solar radiation into electricity after accounting for parasitic power losses (Droher and Squier, 1986).These high-performance solar power systems have been in development for more than three decades, ...

A concentrating solar power (CSP) system can be presented schematically as shown in Fig. 2.1.All systems begin with a concentrator; the various standard configurations of trough, linear Fresnel, dish and tower have been introduced in Chapter 1, and are addressed in detail in later chapters.There is a clear distinction between the line-focusing systems which ...

OverviewDesign and technologyHistoryRecordable and writable optical discsSurface error scanningOptical disc manufacturingSee alsoExternal linksAn optical disc is a flat, usually disc-shaped object that stores information in the form of physical variations on its surface that can be read with the aid of a beam of light. Optical discs can be reflective, where the light source and detector are on the same side of the disc, or

transmissive, where light shines through the disc to be detected on the other side.

It also explores the range of optical elements for collecting, guiding, concentrating, coupling, trapping, transforming and absorbing sunlight - particularly for concentrating solar power (CSP). As optical components typically constitute the largest fraction of cost of such systems, the scope includes research devoted to improving all optical ...

The Northwestern researchers have demonstrated that a Blu-ray disc"s strings of binary code 0s and 1s, embedded as islands and pits to store video information, give solar cells the near-optimal surface texture to improve ...

In order to make solar cells more efficient, texture can be placed on the cell in order to scatter light more effectively, thus increasing the cell"s efficiency. Because of the Blu-ray disc"s quasi-random pattern, it provides the right texture to improve the cells" light absorption across the solar spectrum.

The increase in energy demand and environmental pollution has motivated scientists and researchers to explore alternative energy resources. Solar thermal power offers electrical power production expected from small-scale to large power plants (Keck et al., 2002) allows to cut the dependence on fossil fuels as well as reduces the toxin gasses in the ...

The history of the Global Bod Group, a high-tech group of companies, dates back to the production of CDs in 1998. Baltic Optical Disc (BOD) was the only industrial CD manufacturer in Northern and Eastern Europe. Initially, the company only produced solar cells, but within a few years, its production base was expanded to include the final ...

We consider the trade-off between maximizing overall optical absorption and ensuring that a large fraction of the incident optical power is dissipated in the absorbing host medium rather than in ...

So developers are aiming their next generation of optical discs at long-term data storage for large archives or backup systems, some of which still rely on magnetic tape. Their release does not identify project lifetime. More interesting from an optical viewpoint is the choice of laser--the now well-established 405 nm violet diode.

The photovoltaic effect is used by the photovoltaic cells (PV) to convert energy received from the solar radiation directly in to electrical energy [3].The union of two semiconductor regions presents the architecture of PV cells in Fig. 1, these semiconductors can be of p-type (materials with an excess of holes, called positive charges) or n-type (materials with excess of ...

Our generation portfolio Gas-fired stations emit around half the carbon of a typical coal-fired power station. We operate six natural gas-fired power stations: one baseload station to provide power for everyday use, and

five peaking stations to provide a source of power during peak times. Darling Downs Power Station, QLD Generation capacity: 644 MW Our [...]

Solar dish concentrator system (SDC system) have been widely studied and applied continuously for many years because of their series of advantages such as the high concentration ratio, high optical efficiency and optical-thermal conversion efficiency, etc. SDC system mainly consists of a parabolic dish concentrator and a cavity receiver, which is an ...

The space age saw the use of solar cells in space technology. The Vanguard 1 satellite, launched in 1958, was the first to use solar cells for power, demonstrating the practicality of solar power in space. 1970s: The oil ...

Exploring the History of Archiving: Exhibit Examines the Evolution of Technology Used to Record Memories ... Next generation of the optical disc is announced to be launched in the nearest future. The maximum data storage capacity on a single optical disc that is available on the market now is up to 500 GB, and the new format is going to be able ...

Blu-ray Disc (BD) is an optical disc storage medium designed to supersede the DVD format. The plastic disc is 120 mm in diameter and 1.2 mm thick, the same size as DVDs and CDs. Conventional (pre-BD-XL) Blu-ray Discs contain 25 GB per layer, with dual layer discs (50 GB) being the industry standard for feature-length video discs.

Regardless of why solar power is interesting to you, there is a robust and fascinating history behind solar"s rise to relevant status. Solar has a long list of meanings in today"s day and age, spanning various industries and ...

Solar energy is a kind of green and non-polluting renewable energy resource [3], [4], and sunlight lighting can effectively reduce the electricity consumption in buildings.The direct solar lighting is more efficient than photovoltaic or photothermal utilization because there is no light-to-electricity or light-to-heat energy conversion [5], [6] addition, the sunlight lighting can ...

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