A Short History of Photovoltaic Solar Systems by HK Chaudhary

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The first scientific study of the photoelectric effect was noted as 1839, but science only saw the development of the first electricity generating cell in 1883. Today, nearly 150 years since that initial seed of scientific analysis, there have been a great number of milestones in the chronology of the development of modern solar PV modules. In this era of technology, there is a renewed factor of awareness and consciousness. This is why we are looking at a new age of energy production. â€˜Greenâ€™ or ecologically friendly sources of power are the new holy grail for science. As the world faces a power crisis, and the price of fossil fuels continue to rise; multi crystalline solar modules are more in demand. Let us take a quick look into the history of this miraculous scientific gift.

1883 â€“ Charles Fritts invents the first cell that produces energy by harnessing the power of sunlight with thin sheets of selenium and gold, but it is only effective up to 1%.

1891 â€“ Aleksandr Stoletov creates the first cell based on the outer photoelectric effect.

1904 â€“ Albert Einstein, perhaps the most famous scientific mind of the 20th century writes his paper on the photoelectric effect. In 1921, he receives a Nobel Prize in physics for it.

1950s â€“ Bell Labs start developing photovoltaic solar modules for space exploration purposes.

1954 â€“ Bell Labs invents the first modern silicon solar cells that function with only about 6% efficiency.

1955 â€“ Western electronics releases a commercial solar cell but the costs are huge, almost $1800 per Watt and thus is commercially useless.

1957 â€“ AT&T and Hoffman Electronics produce some polycrystalline solar modules that are only about 8% effective.

1963 â€“ The Sharp Corporation produces a commercially acceptable form of multi crystalline solar module of silicon cells.

1977 â€“ The total energy production exclusively from photovoltaic solar modules exceed 500 kW

1991 â€“ The first chemically enhanced Photoelectric cells are invented and Dye-sensitized cells are integrated into the known advancements.

1999 â€“ The total global power produced from installed photovoltaic solar systems reach the 1000 mega watts mark and thus recognizably becomes an accepted source of electricity.

Today, the global energy production capability from the sun is at over 500,000 mega watts every year. Since the turn into 21st century, man has perhaps understood the need for such technology better. In 2006, the record was achieved as the first cells with over 40% efficiency were invented. Even petroleum giants like BP have started natural energy projects. Asia is one of the leading locations for the development of photovoltaic solar modules for domestic and urban infrastructural uses. The progress has been slow compared to other technology like cars or jet engines, but polycrystalline solar modules are definitely changing the way the world thinks about power. From Google launching their solar panel project, to American presidents installing water heating systems in the white house, the journey of solar PV modules have been prolific and remarkable. Hopefully, in the next few decades, we will be able to do away with fossil fuels altogether and resort to more eco-

friendly options.

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HK Chaudhary (a solar PV modules manufacturer) is a technical writer on the various aspects of new green power development systems.

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