



An innovative solar dish type collector – concentrator system having an original – unique geometrical mathematical model called as DODECAGON which has 12 equal segments

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DOI: [10.5281/zenodo.11397848](https://doi.org/10.5281/zenodo.11397848)

Submission Date: 23 March 2024 | **Published Date:** 31 May 2024

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Abstract

This paper explains an innovation about a solar dish type collector – concentrator system which has an original – unique geometrical mathematical model called as DODECAGON which has 12 equal segments. This solar dish type collector – concentrator forms a dodecagon geometry, and this solar dish is the first DODECAGON geometry which is produced physically.[1]

The solar dish collector – concentrator installed at Iğdır University Energy Park, is the first physically manufactured DODECAGON shape. This geometrical model is very important scientifically and mathematically.[1]

The mathematical design of this innovative geometrical model for the mentioned DODECAGON shape has been realized by “Emin Taner ELMAS” who is the author of this paper. [1]

Keywords: Energy, Green Energy, Energy Transfer, Energy Park Plant, Geometry, Mathematics, Solar Dish type Collector – Concentrator, Dodecagon.

Introduction & Method, Findings and Discussion & Conclusion

This paper explains an innovation about a solar dish type collector – concentrator system which has an original – unique geometrical mathematical model called as DODECAGON which has 12 equal segments. This solar dish type collector – concentrator forms a dodecagon geometry, and this solar dish is the first DODECAGON geometry which is produced physically. Therefore, this is a very important geometrical model in the aspect of mathematical perspective. The mathematical design of this innovative geometrical model for the mentioned DODECAGON shape has been realized by “Emin Taner ELMAS” who is the author of this paper. [1]

The DODECAGON solar dish type collector – concentrator system has been manufactured as a part of the green energy system which is an energy park plant consisting of renewable energy systems established at Iğdır University, Turkey. The mentioned energy park plant is located at the campus section of Vocational School of Higher Education for Technical Sciences. The energy park consists of various renewable energy systems which are photovoltaic solar collector energy system, wind energy system and solar dish type collector – concentrator system. [1]

These types of green energy park plants can produce both electrical energy and also heat energy. Moreover, electrical vehicles can be charged with the electrical energy obtained from these types of energy park plants. Both

environmental benefits and also economical savings can be obtained by the application of such type green energy production models. [1]

This is scientifically and mathematically very important that the solar dish type collector – concentrator system has an original – unique geometrical model called as DODECAGON which has 12 equal segments. This solar dish collector – concentrator forms a dodecagon geometry, and this solar dish is the first DODECAGON geometry which is produced physically. Therefore, this is a very important geometrical model in the aspect of mathematical perspective. The solar dish collector – concentrator installed at Iğdır University Energy Park, is the first physically manufactured DODECAGON shape. The solar dish type collector – concentrator system can focus the solar energy and concentrate the heat since it has a reflective mirror surface. This concentrated heat energy may be used either for producing electricity or for obtaining heat source in order to be able to employ it domestical and/or industrial purposes. [1], [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13]

Figure 1 shows Solar Dish type Collector – Concentrator, Dodecagon Shape. Figure 2, Figure 3, Figure 4 are detail pictures of Solar Dish type Collector – Concentrator, Dodecagon Shape. This solar dish collector – concentrator forms a dodecagon geometry, and this solar dish is the first DODECAGON geometry which is produced physically. Therefore, this is a very important geometrical model in the aspect of mathematical perspective. The solar dish collector – concentrator installed at Iğdır University Energy Park, is the first physically manufactured DODECAGON shape. This geometrical model is very important scientifically and mathematically. Figure 5 shows the general installation works for Energy Park Plant. Figure 6 shows the solar PV panel module and wind turbine produce lighting electricity at the night time. Figure 7 shows the night landscape scenery of Iğdır city from the view of Iğdır University Campus Energy Park. Figure 8 shows the general view of Iğdır University Energy Park Plant. [1]



Figure_1: Solar Dish type Collector – Concentrator, Dodecagon Shape. [1]



Figure_2: Solar Dish type Collector – Concentrator, Dodecagon Shape. [1]

This solar dish collector – concentrator forms a dodecagon geometry, and this solar dish is the first DODECAGON geometry which is produced physically. Therefore, this is a very important geometrical model in the aspect of mathematical perspective. The solar dish collector – concentrator installed at Igdir University Energy Park is the first physically manufactured DODECAGON shape. This geometrical model is very important scientifically and mathematically. The mathematical design of this innovative geometrical model for the mentioned DODECAGON shape has been realized by “Emin Taner ELMAS” who is the author of this paper.



Figure_3: Solar Dish type Collector – Concentrator, Dodecagon Shape. [1]

This solar dish collector – concentrator forms a dodecagon geometry, and this solar dish is the first DODECAGON geometry which is produced physically. Therefore, this is a very important geometrical model in the aspect of mathematical perspective. The solar dish collector – concentrator installed at Igdır University Energy Park is the first physically manufactured DODECAGON shape. This geometrical model is very important scientifically and mathematically. The mathematical design of this innovative geometrical model for the mentioned DODECAGON shape has been realized by “Emin Taner ELMAS” who is the author of this paper.



Figure_4: Solar Dish type Collector – Concentrator, Dodecagon Shape. [1]

This solar dish collector – concentrator forms a dodecagon geometry, and this solar dish is the first DODECAGON geometry which is produced physically. Therefore, this is a very important geometrical model in the aspect of mathematical perspective. The solar dish collector – concentrator installed at Igdir University Energy Park is the first physically manufactured DODECAGON shape. This geometrical model is very important scientifically and mathematically. The mathematical design of this innovative geometrical model for the mentioned DODECAGON shape has been realized by “Emin Taner ELMAS” who is the author of this paper.



Figure_5: The General Installation Works for Energy Park Plant. [1]



Figure_6: The solar PV panel module and wind turbine produce lighting electricity at the night time. [1]



Figure_7: The night landscape scenery of Iğdır city from the view of Iğdır University Campus Energy Park. [1]



Figure_8: The general view of Iğdır University Energy Park Plant. [1]

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CITATION

ELMAS, Emin Taner. (2024). An innovative solar dish type collector – concentrator system having an original – unique geometrical mathematical model called as DODECAGON which has 12 equal segments. In Global Journal of Research in Engineering & Computer Sciences (Vol. 4, Number 3, pp. 31–38). <https://doi.org/10.5281/zenodo.11397848>