

JOURNAL OF QURANIC SCIENCES AND RESEARCH

e-ISSN: 2773-5532



Vol. 5 No. 1 (2024) 1-11 https://publisher.uthm.edu.my/ojs/index.php/jgsr

Scientific Findings on Origin and Attributes of Iron Mentioned in Al-Qur'an

Md. Mamunur Rashid1*

Department of Electrical and Electronic Engineering, Faculty of Engineering University of Scholars, 40 Kemal Ataturk Avenue, Banani, Dhaka, 1213, BANGLADESH

*Corresponding Author: mrashiddm@gmail.com DOI: https://doi.org/10.30880/jqsr.2024.05.01.001

Article Info

Received: 28th February 2024 Accepted: 15th April 2024 Available online: 30th June 2024

Keywords

Al-Qur'an, iron, attributes, benefits, binding energy, magnetic field, scientific knowledge, interpretations

Abstract

Sending down the iron for mankind, mentioned in verse 57:25 of Al-Qur'an, is one of the most significant blessings from Allah (SWT). Everything Allah (SWT) provided us, of course, for the needs, uses, and benefits of human beings. The mention of sending iron and its attributes (strong power and benefits for the people) in the Qur'an must have special significance, whether we comprehend it or not. The interpreters of *Al-Our'an* explained the origin and the attributes of iron according to their contemporary pieces of knowledge. Modern scientific knowledge provides us the opportunity to uncover a better understanding of the origin of iron as well as its attributes. This research work aims to identify, explore, and demonstrate the findings regarding the origin and the attributes of iron mentioned in Al-Qur'an, through the study of modern scientific resources. All the required information & data, for this research, have been taken from the relevant and available online sources. The findings of this research demonstrate the superiority and uniqueness of iron compared to all available elements/materials. These findings may also give us a better understanding of mentioning "Iron" in the Holy Book of the Qur'an.

1. Introduction

Allah (SWT) has provided us with countless blessings. He has created all living things and has grown everything in the fields for our livelihood so we eat food and make our clothing. He blessed us with water and air for our survival, gave us the ability to see and hear, and gave us intellect, health, wealth, and relatives. He made heavenly bodies such as the sun, moon, earth, sky, stars, and galaxies. He has provided us with the cognition and ability to acknowledge that the blessings of Allah (SWT) surround us. Allah (SWT) mentions numerous of His blessings in many verses of the Qur'an. Among the countless blessings of Allah (SWT), some are mentioned by name and some are mentioned along with their benefits for the people. Some examples from the Qur'an are:

"He is the One who sent down water from the heavens from which you have your drink and from which (you grow) plants, on which you pasture cattle (Al-Qur'an 16:10)."

"He causes thereof to grow for you the crops, and olives, and date-palms, and grape-vines, and of all the fruits. Surely, in that, there is a sign for a people who ponder (Al-Qur'an 16:11)."

"And He has subjugated for you the day and the night and the sun and the moon. And the stars (too) are subservient by His command. Surely, in that, there are signs for a people who understand (Al-Qur'an16:12)."



"And (He subjugated) for you whatever He created on the earth having varied colors. Surely, in that, there is a sign for a people who accept advice (Al-Qur'an 16:13).

"And He is the One who has subjugated the sea so that you may eat fresh meat therefrom, and may take out from it ornaments you wear, and you see the boats cleaving through it, and so that you may seek of His bounty and that you may be grateful (Al-Qur'an 16:14).

Iron is the most essential and the most used blessing, sent down for us, from Allah (SWT). Iron is named a Surah (*Al-Hadid*) of Al-Qur'an and mentioned in a verse of the same Surah, verse 57:25, along with its attributes. We must acknowledge that the title of this Surah "Al-Hadid (iron)" is for the distinct importance of iron and its attributes. Generally, regarding the attributes of iron, two broad topics have been addressed: the mighty or strong power of iron, and the benefits of iron for the people. The interpreters of the books of Al-Qur'an have explained the origin and the attributes of iron based on their existing pieces of knowledge. Sending down iron has been thought to be creating iron in the Earth. Mighty or strong power of iron, has been referred to the weapons, such as swords, spears, daggers, arrows, etc. The benefits of iron for the people have been referred to as the making of livelihood things, such as coins, hammers, axes, saws, chisels, shovels, various tools, machines, mechanical apparatus, etc. However, there are plenty of opportunities to interpret the "origin and attributes of iron," mentioned in verse 57:25 of *Al-Qur'an*, getting relevant information from the modern scientific findings.

Modern scientific knowledge enables us to reveal more information regarding the origin and the attributes of iron. This research has been aimed to identify, explore, and demonstrate the scientific findings on the "origin of iron as well as its strong power and benefits for the people" as mentioned in Al-Qur'an (Amir, S., & Yusoff, Z. M. (2017), Rashed, Z. N., et al (2015). The methodology of this research includes the study of the existing interpretations, the study of the scientific resources, and finding the scientific information, relevant to the origin and the attributes of iron, mentioned in Al-Qur'an. The overall area of this research covers:

- Scientific background of iron,
- Nuclear binding energy and stability of iron,
- The physical strength of the iron,
- Magnetic properties of iron,
- Creation of Earth's magnetic field by the existence of iron in its core,
- Uses and applications of iron and its alloys in industries,
- Protection of life by the presence of Earth's magnetic field,
- Needs of iron for living things.

All the necessary information and data about these scientific areas of research have been taken from the relevant online sources. The outcomes of this research display the evidence of asserting the superiority and uniqueness of iron.

2. Existing Interpretations of Verse 57:25

Allah (SWT) stated in the verse 57:25 of Al-Qur'an:

"We have indeed sent Our messengers with clear proofs, and sent down with them the Book and the Balance, so that people may uphold justice. And We sent down iron in which there is a strong power and benefits for the people; and (We did it) so that Allah knows the one who helps Him and His messengers without seeing (Him). Surely Allah is Strong, Mighty (Al-Qur'an 57:25)."

Allah (SWT) mentioned Iron and its attributes here by the statement:

"And We sent down iron in which there is strong power and benefits for the people."



It is to be noted that: بَأْسٌ شَنِيدٌ is translated as, mighty power; strong power; military power; great strength; etc. by the translators, while the benefits (مَنْافِعُ) of iron for the people are countless.

Tafsir Maariful Qur'an reported that "iron serves two purposes (Maariful Qur'an):

- It represents the power that holds the hostile opponents in great awe and may compel the rebellious people to abide by Divine laws and the system of justice.
- It also holds great benefits for man. In other words, iron is a thing of common utility as it is used on a large scale in various industries. It is indispensable for the invention of every device, machine, mechanical apparatus, and contrivance, and there is some iron in almost everything man innovates. No contrivance is possible without iron."

Abul Ala Maududi interpreted in Tafsir Tafhimul Qur'an:

"Sending down iron means creating iron in the earth just as in Surah Az-Zumar, Ayat 6, it has been said: He sent down for you eight heads of cattle, male and female. As whatever exists in the earth, has come here by Allah's command, and has not appeared by itself. Its being created has been expressed in the Quran as its being sent down. The mention of sending down iron which has great strength and other benefits for men immediately after stating the object of the mission of the Prophets by itself indicates that by iron here is meant political and military power. Thus the verse means: Allah did not raise His Prophets in the world just to present a scheme for the establishment of justice, but it was also a part of their mission to endeavor to enforce it practically, to collect necessary power to establish justice in all spheres of life, to punish those who might disrupt it and to break the power of those who might resist it (Maududi)."

According to Tafsir Ibn Kathir, the explanation of the sending of iron and its attributes is as follows:

"We made iron a deterrent for those who refuse the truth and oppose it after the proof has been established against them. Allah's Messenger (PBUH) remained in Makkah for thirteen years. During that time, the revelation continued being sent to him, containing arguments against the idolators and explaining Tawhid with detail and proofs. When the evidence was established against those who defied the Messenger (PBUH), Allah decreed the Hijrah. Then He ordered the believers to fight the disbelievers using swords, using them to strike the necks and foreheads of those who opposed, rejected, and denied the Qur'an. The mighty power of iron is in reference to weapons, such as swords, spears, daggers, arrows, shields, and so forth. Benefits for mankind meaning, in their livelihood, such as using it to make coins, hammers, axes, saws chisels, shovels, and various tools that people use for tilting the land, sowing, cooking, making dough, and manufacturing other objects necessary for their livelihood (Ibn Kathir)."

3. Scientific Background of Iron

3.1 Origin of Iron

Allah (SWT) has used the word "anzalna," translated as "we sent down," for iron in verse 25 of Surah Al-Hadid (Al-Qur'an 57:25). Existing concept of "sending down iron" was thought to be creating iron on the Earth. However, modern astronomical findings have disclosed that the iron found on Earth has come from the stars in outer space. Not only the iron of Earth but also the presence of iron in the entire solar system comes from outer space. Iron is originally made from fusion of lighter elements in stars. Fig. 1 shows the cross-section of a star with all its component elements.



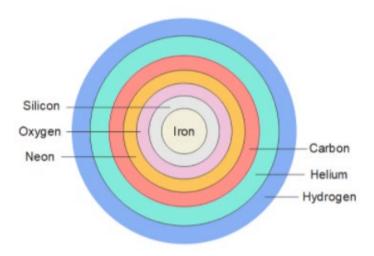


Fig. 1 Cross section of a star

In the stars, when hydrogen present in the star's core is exhausted, the star starts its fusion chain. Hydrogen fuses with helium to form heavier elements, this process goes on and on, first it forms Carbon, then Neon, then Oxygen, then Silicone, and at last it forms iron as the end product. The stars that have exhausted their fuel meaning when the lifetime of the star is over they explode in a supernova explosion which is a powerful, luminous stellar explosion (How did Iron come to earth? Vedantu)." Another explanation is that when the amount of iron exceeds a certain level in a star, the star can no longer accommodate it, and it eventually explodes by supernova (The Miracle of Iron, 2007).

After the supernova explosion, pieces of iron are blasted all around space. These fragments of iron come to the Earth in the form of meteors. The major part of iron of this iron is accumulated as solid in the inner core and as liquid in the outer cores of the Earth. In addition to being found abundantly on Earth, iron is also found in large quantities in the sun and in the cores of all of the planets in our Solar System. The large amount of iron oxide on the surface of Mars gives this planet its red color (Why is Mars reddish? Cool Cosmos).

3.2 Notable Features of Iron

Iron is the most important of all metals/materials available for human beings. It is the most abundant of all metals, the cheapest metal, and also the metal that is used the most in the world. Around 90% of all the metal that is refined today is iron, most of it being used to produce steel, an important and versatile alloy of iron (Patwardhan, 2018).

Iron and steel are widely used due to their many advantages as well as for their proven history of reliability and performance. The reasons why iron and steel are widely used in various industries are mainly for their abundance, versatility, strength, weldability, and machinability. These notable and incomparable features of iron were expressed in more detail as follows (Khan, 2023):

- Iron is the most abundant metal on the earth, which makes it readily available and relatively inexpensive.
- Iron and steel can be alloyed with other elements to create a wide range of materials with different properties, making it suitable for a variety of applications.
- Iron and steel are strong materials, which makes them ideal for construction, machine parts, and other applications where strength and durability are important.
- Iron and steel can be easily joined using welding techniques, which makes it possible to create large, complex structures and components.
- Iron and steel can be easily machined, which makes it possible to create precise, custom-made parts and components.

3.3 Alloys of Iron

Iron alloys are a combination of iron with other elements such as carbon, chromium, nickel, and molybdenum. Iron alloys are used in a wide range of applications due to their excellent mechanical properties, corrosion resistance, and other desirable characteristics. Some examples of iron alloys are steel, stainless steel, cast iron, wrought iron, iron-nickel alloy, and iron-chromium alloy. The versatile compositions and characteristics of these alloys were presented by Fasteners, (n.d.) as follows:



- Steel is an alloy of iron with carbon and other elements. It is widely used in construction, infrastructure, transportation, and manufacturing due to its high strength, durability, and versatility.
- Stainless steel is an alloy of iron with chromium, nickel, and other elements. It is highly resistant to corrosion, making it ideal for use in kitchen utensils, cutlery, medical equipment, and construction applications where exposure to moisture or chemicals is common.
- Cast iron is an alloy of iron with carbon and silicon. It is used in the production of engine blocks, pipes, and decorative items due to its excellent castability and good machinability.
- Wrought iron is an alloy of iron with a low carbon content, which makes it malleable and ductile. It is often used in decorative items, such as gates and railings.
- Iron-nickel alloys, such as Invar and Kovar, are used in applications that require low thermal expansion, such as precision instruments, clocks, and watches.
- Iron-chromium alloys, such as nichrome and chromel, are used in electrical heating elements, thermocouples, and resistance wires.

4. Strong Power of Iron

4.1 Nuclear Binding Energy of Iron

Nuclear binding energy is the energy required to separate an atomic nucleus into its constituent protons and neutrons. In other words, it is the energy that would be liberated by combining individual protons and neutrons into a single nucleus. Nuclear Physicists demonstrated the binding energy of all elements by a curve, binding energy per nucleon (neutron or proton) vs atomic mass number (Gregersen, 2023). As shown in Fig. 2, this curve revealed that: "Iron (Fe-56), the most available isotope of iron, has the highest nuclear binding energy per nucleon (8.8 MeV) and as a result, it is the most stable nuclei (element)." The highest binding energy per nucleon of iron means that its nucleus has the strongest binding force holding its protons and neutrons together, making it less likely to undergo nuclear reactions or decay.

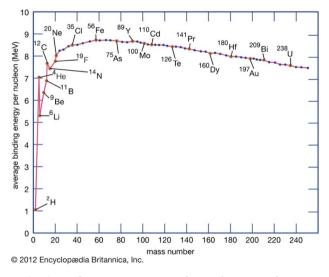


Fig. 2 Binding energy per nucleon of various elements

4.2 Nuclear Stability of Iron

The stability of a nucleus is determined by the balance between the strong nuclear force and the electromagnetic force. The strong nuclear force holds the nucleus together and the electromagnetic force can cause the nucleus to break apart. The number of protons, and neutrons, and their arrangement in the nucleus play a role in its stability. The number of protons and neutrons in Iron-56, known as its nucleon number, plays a crucial role in its stability. Iron-56 has 26 protons and 30 neutrons, which is close to the ratio of 1:1 for protons and neutrons, making it energetically favorable and stable. So, according to modern science, iron has been proven as the most tightly bound and stable element.

4.3 Physical Strength of Iron

One of the most considered properties when choosing a metal for any project is its physical strength. The strength of a metal depends on four properties:

Tensile Strength: How well a metal resists being pulled apart



- Compressive Strength: How well a material resists being squashed together
- Yield Strength: How well a rod or beam of a particular metal resists bending and permanent damage
- Impact Strength: The ability to resist shattering upon impact with another object or surface

Based on these properties, the top 5 metals are Tungsten, Steel, Chromium, Titanium, and Iron (Strongest Metals). Tungsten, the top-ranking in strength, has very limited use. Steel, an alloy of iron, is the second strongest and the most widely used metal in the world. Iron itself is the fifth strongest and the most abundant element in the planet's total composition.

4.4 Magnetism of Iron

Iron is a *ferromagnetic metal* that shows the *strongest magnetism*, and because of this magnetic property of iron, it was named Ferrum in Latin. Its magnetic property comes from the fact that the atom itself possesses a "magnetic moment" that interacts with an applied magnetic field. Iron has a permanent magnetic moment; its atom is a tiny electromagnet because most electrons spin in the same direction. There are few elements such as iron, cobalt, and nickel with this permanent magnetic moment property (Gregersen, 2022).

"Soft Iron" is the best material for making electromagnets (required for generating electricity). The function of the soft iron core is to increase the magnetic field in a coil of the electromagnet, compared to using a vacuum as the core, because of its much higher permeability (lpfr, 2007). The permeability of the core determines the strength of the magnetic field induced by an electromagnet. A *soft iron core* in an electric power generator helps the most, more than any other material, to increase the magnetic field strength resulting the most efficient and powerful generator.

4.5 Earth's Magnetic Field

The *Earth's magnetic field*, caused by the presence of high concentrations of iron in the inner core and the outer core of Earth, is another important blessing from Allah (SWT). The inner core of Earth is the solid metals while the outer core is molten. Both the cores consist of mainly iron (85%) and a small amount of nickel and traces of some other metals (McDonough, 2017). The *Earth's magnetic field* is generated by the electric current produced by the motion of molten iron and other metals in the outer core surrounding the solid inner core consisting mainly of iron (Sarkar, n.d.).

Convective forces, like boiling water on a stove, generated in the outer core because of the temperature difference between the two cores, constantly move the molten metals. The moving molten metals also swirl in whirlpools driven by *Earth's rotation* as shown in Fig. 3. This molten mass of metals moves around, it generates electrical currents hundreds of miles wide and flowing at thousands of miles per hour as Earth rotates. This mechanism, known as the geodynamo, is responsible for maintaining Earth's magnetic field. The Earth's magnetic field extends out into space and forms a region called the magnetosphere. Because of possessing this magnetic field, the magnetosphere shields us from the harmful effects of the solar wind and radiation from outer space. So, because the Earth's core has iron, we have a magnetic field that protects life on Earth from the harmful radiation coming from outer space (Buis, 2021).

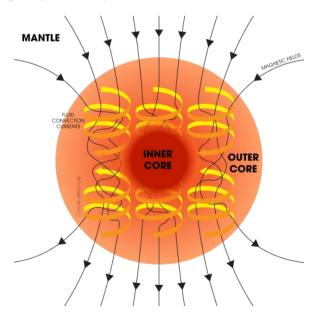


Fig. 3 Swirling movement of molten metals and generation of magnetic field



5. Benefits of Iron for People

5.1 Uses and Applications

Iron, in general, was heavily used for daily used *tools and weapons* in the past for its abundance and strength. However, nowadays, we see much use of iron to create steel, an alloy of iron, often used in manufacturing and civil engineering. Stainless steel, another alloy of iron, is highly resistant to corrosion. It is commonly used in kitchen cutlery, appliances, cookware, and also used for hospital equipment. Uses of iron in daily life include machinery and tools, as well as vehicles, hulls of ships, structural elements for buildings, bridges, and aircraft. The availability, versatility, strength, weldability, and machine-ability of iron and steel offer us the most acknowledged options for use of them in diverse industries. The uses of iron and its alloys in some prominent sectors are briefly presented here.

5.1.1 Infrastructure and Construction

Iron and steel are fundamental materials in the construction of buildings, bridges, roads, railways, and other infrastructure projects. They provide the structural strength, durability, and flexibility required to support large and complex structures. Its ability to bear loads and to be produced in an endless variety of forms, in addition to its resistance to fire and corrosion, quickly encouraged architectural adaptation, first as columns and arches and afterward in skeletal structures. Construction by iron and steel provides far stronger and taller structures with less expenditure of material than stone, brick, or wood and can produce greater unsupported spans over openings and interior or exterior spaces (Collins et al. 2023).

5.1.2 Manufacturing Industry

Iron and steel are essential raw materials for a wide range of manufacturing industries, including automotive, machinery, appliances, and equipment production. Steel is used to create components, parts, and machinery critical for industrial processes and manufacturing operations. The iron and steel industry helps to produce many tools that are required to build a machine or equipment by manufacturing its parts. Steel is the world's most important engineering and construction material. It is used in every aspect of our lives; in cars and construction products, refrigerators and washing machines, cargo ships, and surgical scalpels (About Steel).

5.1.3 Energy Sector

Soft iron is the most efficient core material for electromagnets, generators, and transformers as required for power generation, transmission, and distribution. Steel is used in the construction of power plants, pipelines, and equipment for the generation, transmission, and distribution of energy. Renewable energy sources such as wind turbines and solar panels also require steel components. Steel is the main material used in onshore and offshore wind turbines. Almost every component of a wind turbine is made of steel, from the foundation to the tower, gears, and casings (Steel and Energy).

5.1.4 Transportation

Steel is very much essential for transport-related infrastructure such as roads, bridges, ports, stations, airports, and fueling. The automotive, aerospace, and maritime industries rely heavily on iron and steel for vehicle and aircraft manufacturing, as well as the construction of ships and submarines. The shipbuilding industry traditionally uses structural steel plates to fabricate ship hulls. Modern steel plates have much higher tensile strengths, making them much better suited to the efficient construction of large container ships. Steel ships transport 90% of the world's cargo. An estimated number of 17 million containers of varying types make up the worldwide container fleet and the majority are made of steel. Rail transport requires steel in the trains and for the rails and infrastructure. The main steel components of trains are bogies including wheels, axels, bearings, and motors. Freight or goods wagons are made almost entirely of steel. Steel is required for the engines and landing gear (Steel in Transport).

5.1.5 Packaging and Containers

Steel is used in the production of cans, containers, drums, and packaging materials, protecting food, beverages, chemicals, and other goods. Steel packaging offers 100% barrier protection against light, water, and air, and is the most tamper-tamper-resistant food packaging option available today. By extending the product's shelf-life, steel cans allow longer sell-by and use-by dates, thus reducing waste. Steel's relatively high thermal conductivity means canned drinks chill much faster than those in glass or plastic bottles. Steel is used to pack more than 1,500 food and drink items as well as paint, health and beauty products, and household products (Steel Packaging).



5.1.6 Consumer Goods

Steel is used in a variety of consumer goods, including appliances, tools, cutlery, and household items. Its strength, durability, and versatility make it suitable for a wide range of products. The amount of steel in refrigerators, stoves, microwave ovens, dishwashers, and clothes washers and dryers varies, as do the motors where relevant. Most of the tableware and utensils we use daily are made of stainless steel, another alloy of iron produced by mixing chromium and nickel in its manufacture. Stainless steel is an extraordinarily robust and long-lasting material that won't rust or stain (What is Steel? Vedantu).

5.1.7 Defense and Security

Iron and steel are vital materials for the defense industry, including the production of military vehicles, equipment, weapons, and infrastructure. Steel plate is used in the bodies and propulsion systems of the naval fleet. The control cables on virtually all military aircraft, including fighter jets and military transport planes, are produced from steel wire rope. Steel industries are working to produce high-quality, cost-effective products for military uses in various applications ranging from aircraft carriers and nuclear submarines to Patriot and Stinger missiles, armor plates for tanks, and field artillery pieces, as well as every major military aircraft in production today.

Steels are crucial components for missiles, jet aircraft, submarines, helicopters, munitions, etc. required for military strength. Steel plate is used in the bodies and propulsion systems of the naval fleet. The control cables on virtually all military aircraft, including fighter jets and military transport planes, are produced from steel wire rope. In addition, land-based vehicles such as the Bradley Fighting Vehicle, Abrams Tank, and MRAP vehicles use significant amounts of steel (National Defense).

5.2 Protection of Life on Earth

A *life-saving environment* in the upper atmosphere is the *Ozone layer*, a region between roughly 15 and 35 km above the Earth's surface, containing relatively high concentrations of ozone molecules (O₃). The ozone layer blocks almost all solar radiation of wavelengths less than 290 nm from reaching the Earth's surface, including certain types of ultraviolet (UV) and other forms of radiation (Wuebbles, 2024).

The magnetic field, generated by the presence of iron in the Earth's core, deflects most of the solar wind and saves the ozone layer that protects the Earth from harmful ultraviolet radiation. The magnetic field around the Earth also protects the life of all the living things on our planet from much of the harmful radiation coming from other galactic bodies as well as the Sun. If the magnetic field of the Earth had not been created by iron, there would be no life on Earth. Without this magnetic field, dangerous radiation like gamma rays and x-rays would obliterate any organic life from ever forming (Earth's Magnetic Field & Iron, 2022).

5.3 Existence of Life on Earth

Iron is so important, for the living beings on Earth, that all life would cease to exist without it. Every living thing, plants, animals, human beings, bacteria, and even cancer cells all need iron to grow and survive. Plants require iron to make chlorophyll, which is necessary for growth and generating oxygen for people to breathe. Plants, animals, and human beings require iron to make DNA, which encodes all life. Animals and humans also need iron to make hemoglobin, which delivers oxygen to the body. Iron also carries carbon dioxide out of the body, which plants need to function. Humans also need iron to make myoglobin for muscles. Myoglobin is a protein like hemoglobin, but it is an oxygen-storage protein contained in the muscles of the body. We need the oxygen stored in myoglobin when we use our muscles to walk, run, climb, or move in any way (Iron and Life, 2022).

6. Findings

This *research outcome* has demonstrated some superior and unique findings on the "origin and attributes of iron" mentioned in Al-Qur'an. From the findings of this research, we have come to know that:

- Iron is originated in the stars of outer space and sent down to Earth;
- The nuclear binding energy of iron is the highest of all elements;
- The material Strength of steel, an alloy of iron, is the second highest of all materials;
- The strongest magnetism of iron renders its much use in generating electric power;
- Iron in the Earth's core generates a strong magnetic field around the Earth;
- Uses and applications of iron and its alloys are the highest of all materials;
- Earth's magnetic field protects our life from much of the harmful radiation coming from the Sun as well as from the other bodies of outer space;
- All living things, plants, animals, human beings, etc. need iron to grow and survive.



7. Conclusion

Iron is one of the most significant blessings of Allah (SWT). Moreover, the mention of iron and its attributes in the Holy Qur'an may indicate its special significance. Existing Tafsirs (Books of interpretations) explained, the mention of iron and its attributes in Al-Qur'an, according to the traditional knowledge and experience. However, modern scientific discoveries, knowledge, and open-access resources have provided us with better opportunities to understand, to some extent, the Miracles of Qur'anic verses. This research work has been carried out to explore and demonstrate the scientific findings relevant to iron and its attributes as mentioned in Al-Qur'an. The outcome of this research has revealed some wonderful scientific findings about the origin of iron and its attributes (strong power and benefits for the people) as mentioned in the Surah Al-Hadid of Al-Qur'an.

The findings from this research give us a thoughtful understanding of mentioning iron in the Qur'an. A better understanding of the significance of mentioning iron and its attributes in the Holy Qur'an would not only strengthen the faith of Muslims but also demonstrate the Divine assertiveness of Islam to non-Muslims. The mention of iron in this context is a reference to the creative power and control of Allah (SWT) over all aspects of the universe, including elements like iron. The naming of "Iron" as the title of a Surah is a reminder of the supreme authority of Allah (SWT), His countless blessings for mankind and other living beings, and ultimately His role as the Master of all creation.

Acknowledgement

The information and resources used for this research have been taken from Quran.com, Englishtafsir.com, Springer, and many other open-source scientific websites. The author is thankful to Quran.com and Englishtafsir.com for getting the translations and interpretations required for this research. The author is also thankful to Springer, Britannica, and many other scientific websites for giving the free access to their websites as well as for providing us with the opportunity of getting necessary information relevant to this research.

Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

References

About Steel. World Steel Association, AISBL. Retrieved from https://worldsteel.org/about-steel/about-steel/

Al-Qur'an 16:10. Translation, Maariful Qur'an, Quran.com.

Al-Qur'an 16:11. Translation, Maariful Qur'an, Quran.com

Al-Qur'an 16:12. Translation, Maariful Qur'an, Quran.com

Al-Qur'an 16:13. Translation, Maariful Qur'an, Quran.com

Al-Qur'an 16:14. Translation, Maariful Qur'an, Quran.com

Al-Qur'an 57:25. Translation, Maariful Qur'an, Quran.com

Amir, S., & Yusoff, Z. M. (2017). The Contemporary Scientific Interpretation of Al-Quran: A Review on Al-Sha'rawi's Method in Tafsir. QURANICA-International Journal of Quranic Research, 9(1), 51-66.

Buis, Alan. (2021, August 3). Earth's Magnetosphere: Protecting Our Planet from Harmful Space Energy. Global Climate Change, NASA. Retrieved from https://climate.nasa.gov/news/3105/earths-magnetosphere-protecting-our-planet-from-harmful-space-energy/

Collins, Peter, et al. (2023, December 27). Iron and Steel, Architecture, Britannica. Retrieved from https://www.britannica.com/topic/architecture/Iron-and-steel



- Earth's Magnetic Field & Iron. (2022, February 9). Iron, Quran Talk Blog. Retrieved from https://qurantalkblog.com/2022/02/09/iron/
- Fasteners, Ananka. (n.d.). What are examples of iron alloys and what are their uses? Quora.com. Retrieved from https://www.quora.com/What-are-examples-of-iron-alloys-and-what-are-their-uses/answer/Ananka-Fasteners
- Gregersen, Erik. (2022, July 8). Ferromagnetism, Science & Tech, Britannica. Retrieved from https://www.britannica.com/science/ferromagnetism
- Gregersen, Erik. (2023, April 10). Nuclear binding energy, Science & Tech, Britannica. Retrieved from https://www.britannica.com/science/nuclear-binding-energy
- How did Iron come to earth (millions of year ago)? The Universe, Vedantu. Retrieved from https://www.vedantu.com/question-answer/did-iron-come-to-earth-millions-of-years-ago-class-12-physics-cbse-5ff7d24ddf870f36509e02f0
- Ibn Kathir. Tafsir Ibn Kathir (Abridged), Vol-9, page-500.
- Iron and Life (2022, February 9). Iron, Quran Talk Blog. Retrieved from https://qurantalkblog.com/2022/02/09/iron/
- Khan, Saif. (2023, February 8). Why iron and steel are almost the only ones that are used in industry? More metal and more alloy are used the most in industry? Why iron and steel in particular? Quora.com. Retrieved from https://www.quora.com/Why-iron-and-steel-are-almost-the-only-ones-that-are-used-in-industry-More-metal-and-more-alloy-are-used-the-most-in-industry-Why-iron-and-steel-in-particular
- lpfr. (2007, April 8). Soft Iron Core Functions in Inductor, Motor & Generator, Physics Forums. Retrieved from https://www.physicsforums.com/threads/soft-iron-core-functions-in-inductor-motor-generator.164613/
- Maariful Qur'an. A Comprehensive Commentary on the Holy Quran, Maulana Mufti Muhammad Shafi, Vol-8, page-334.
- Maududi, Abul Ala. Tafhim al-Qur'an The Meaning of the Qur'an, Vol-5, page-345.
- McDonough, W.F. (2017, May 18). Earth's Core. In: White, W. (eds) Encyclopedia of Geochemistry, Encyclopedia of Earth Sciences Series. Springer, Cham. https://doi.org/10.1007/978-3-319-39193-9_258-1
- National Defense. Steel Markets, American Iron and Steel Institute. Retrieved from https://www.steel.org/steel-markets/national-defense/
- Patwardhan, Veena. (2018, October 26). Iron- A workhorse of an element, Elements Matter. Chemical Industry Digest. Retrieved from https://chemindigest.com/iron-a-workhorse-of-an-element/
- Rashed, Z. N., Tamuri, A. H., Razak, S. R. A., & Madzalan, J. (2015). Konsep pengintegrasian ilmu Sains al-Quran dalam pengajaran Pendidikan Islam. Jurnal Sultan Alauddin Sulaiman Shah, 2, 1-16.Sarkar, Manash Kumar Dev. (n.d.). How is the Earth and Magnetic field generated? Quora.com. Retrieved from https://www.quora.com/How-is-the-Earth-and-magnetic-field-generated
- Steel and Energy. Steel Markets, World Steel Association, AISBL. Retrieved from https://worldsteel.org/steel-topics/steel-markets/energy/
- Steel in Transport. Steel Markets, World Steel Association, AISBL. Retrieved, from https://worldsteel.org/steel-topics/steel-in-transport/
- Steel Packaging. Steel Markets, World Steel Association, AISBL. Retrieved from https://worldsteel.org/steel-topics/steel-markets/steel-packaging/



Strongest Metals. Thyssenkrupp Materials Ltd, UK. Retrieved from https://www.thyssenkrupp-materials.co.uk/strongest-metals

The Miracle of Iron. (2007, May 14). The Scientific Miracles of the Holy Quran, Evidence Islam is Truth, The Religion of Islam. Retrieved from https://www.islamreligion.com/articles/562/miracle-of-iron#ir ftn23107

What is Steel? Environmental Studies, Vedantu. Retrieved from https://www.vedantu.com/evs/uses-of-steel

Why is Mars reddish? Mars, Ask an Astronomer, Cool Cosmos, IPAC. Retrieved from https://coolcosmos.ipac.caltech.edu/ask/69-Why-is-Mars-reddish

Wuebbles, Donald, (2024, January 23). Ozone Layer, Atmospheric Science, Science & Tech, Britannica. Retrieved from https://www.britannica.com/science/ozone-layer

