

A Newly Discovered Scientific Miracle of the Qur'an: Flotation

Kur'an'ın Yeni Keřfedilen İlmî Bir Mucizesi: Flotasyon

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Makale Bilgisi	Article Information
Makale Türü – Article Type	Research Article/Arařtırma Makalesi
Geliř Tarihi – Date Received	30 Haziran / June 2022
Kabul Tarihi – Date Accepted	27 November / Kasım 2022
Yayın Tarihi – Date Published	28 December / Aralık 2022
Yayın Sezonu	December / Aralık
Issue - Sayı	14

Atıf / Cite as: CEVİZCİ, Halim. “A Newly Discovered Scientific Miracle of the Qur'an: Flotation”. *Katre Uluslararası İnsan Arařtırmaları Dergisi – Katre International Human Studies Journal* 14 (December/Aralık 2022), 96-110. <https://doi.org/10.53427/katre>.

İntihal / Plagiarism: Bu makale, en az iki hakem tarafından incelenmiş ve intihal içermediği teyit edilmiştir. / This article has been reviewed by at least two referees and confirmed to include no plagiarism. <https://dergipark.org.tr/tr/pub/katre/policy>

Published by İstanbul İlim ve Kültür Vakfı / Istanbul Foundation for Science and Culture, İstanbul, Türkiye.



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Abstract

This study aims to evaluate the sign of a verse in the Surah Ra'd to the flotation method, which was discovered about 150 years ago in the mineral processing area.

The Qur'an is the greatest miracle of the Prophet Muhammad (PBUH). In Islamic literature, the miracle of the Qur'an is expressed with the term "i'câzü'l-Qur'an (Miraculousness of The Qur'ân)." This term is generally defined as "the feature of the Qur'an that cannot be produced due to its literary superiority and richness of content."

Islamic scholars generally state that the Qur'an is a miracle not because of a single feature but because it contains many features. Every feature that reveals the superiority of the Qur'an is called "respect (vecih)." For example, Bediuzzaman Said Nursi, one of the leading scholars of the last century, stated that the Qur'an is a miracle in at least forty aspects, and he explained this subject in detail in the chapter called "The Twenty-Fifth Word: The Miraculousness of The Qur'ân" in his book Sözlür (Words). Some of these aspects include its inclusiveness, youthfulness, and a suitable address for every stratum in every century. Because of these features, the "scientific miraculousness" of the Qur'an is also mentioned. By this, it is rather meant that "some of the information revealed by the positive sciences about the formation and functioning of nature, based on observation and experimentation methods, and the brief information given by the Qur'an on the formation and functioning of nature in order to draw attention to the existence, unity, and existence of Allah and the hereafter life" is meant.

Nursi has developed some methods for detecting the scientific miracles of the Qur'an, one of which is "showing the laws about the whole." the Qur'an, sometimes, through some simple detail or a particular event, compassionately shows to simple, ordinary minds most extensive, lengthy, universal rules and general laws, like showing a sea in an ewer. For example, the Qur'an tells an event about a person, a prophet, or a small community, reminding us through this story that the essence of this work is valid for all people. In the science of Fiqh Methodology, the indications of the word have been handled from various angles. It is divided into four parts: the indication of the phrase, the indication of the sign, the indication of the verse, and the indication of the iktizan. This shows that a word has at least four layers of meaning, all of which are valid and correct in terms of a single meaning from different meanings. One of these meanings is that the provision that is valid partly due to the partnership in the cause is valid on the whole.

Almighty Allah mentions in the Qur'an that people put certain items into the fire to obtain ornaments or something else they will use, and as a result, foam is formed (ar-Ra'd 13/17). As such, the verse also mentions some processes that people did at that time. In addition, the verse points to the Flotation method,

which was discovered about one hundred and fifty years ago, although people did not know it that day.

The word meaning of flotation means standing on water, buoyancy. We can say that it is one of the essential ore dressing methods, even the first. It is used in mineral processing processes to separate valuable minerals from worthless minerals (gang) by utilizing the surface/interface properties of the minerals. Flotation recovers about two-thirds of metals and other industrial raw materials from raw ore. It is the physicochemical separation of minerals into two, using natural or reagents, with air-loving (hydrophobic) or water-loving (hydro fill) properties. Generally, we can describe the accumulation and separation of hydrophobic ones by adhering to the bubble given to the water by mixing the minerals in powder size with the water, as flotation.

The Qur'an points to the flotation method used in the mineral processing industry and the importance of minerals for people. The name of one of the 114 chapters of the Qur'an is "Hadeed," which means iron. The processing of iron and copper by extracting it from the ground is clearly expressed in the Qur'an. It is well-known how important iron, copper, other metals, and industrial raw materials are in today's technology. Here we must remember that about 40 minerals are used in cars and about 20 in mobile phones. The Qur'an says, "Have We not made the earth as a bed, and the mountains as pegs?" (An-Naba, 78/6-7). The critical benefits of mountains, such as treasury for essential minerals and water resources (al-Baqara, 2/29), are clearly explained in the Qur'an.

In this article, while examining how the Qur'an refers to the flotation method, on the other hand, by giving basic information about flotation, the importance of this method pointed out by the Qur'an will be pointed out. It has become customary in the Islamic tradition to associate every profession with a prophet. The pioneers of the miners were David (PUH), Solomon (PUH), and Dhulkarnejn. In addition, there is no distinction between religion and science in Islam. From a religious point of view, at the same time, it is seen that the natural sciences are branches of science that show Allah's existence, unity, and some names and attributes.

Regarding the primary feature of the religion of Islam, there is no difference between religious sciences and natural sciences. Therefore, this article is also considered an example of building a bridge between the Qur'an and science. In addition, the study constitutes a clear scientific example of the sentence, "As time gets older, the Qur'an gets younger, and its signs appear." This study explains that the Qur'an implied the flotation method about 1440 years ago. At the same time, humans have been using flotation for approximately the last 150 years.

Keywords: Tafseer, The Quran, Miracle, Scientific Miracle, Flotation, Mining, Mineral Processing, Technology

Kur'an'ın Yeni Keşfedilen İlmî Bir Mucizesi: Flotasyon

Öz

Bu çalışmanın amacı Ra'd suresinde geçen bir âyetin cevher hazırlama alanında yaklaşık 150 yıl önce keşfedilmiş olan flotasyon metoduna işaretini değerlendirmektir.

Kur'an-ı Kerim, Hz. Muhammed'in (sav) en büyük mucizesidir. İslâm literatüründe Kur'an'ın mucizeliği "i'câzü'l-Kur'an" terimiyle ifade edilir. Bu terim genellikle "Kur'an'ın, sahip bulunduğu edebî üstünlük ve muhteva zenginliği gibi sebeplerle benzerinin meydana getirilememesi özelliği" şeklinde tanımlanmıştır.

Kur'an'ın mucizeliği, hissî bir mucize değil, akılla bilinmesi sebebiyle aklî bir mucize olarak kabul edilmiştir. Kur'an nazil olduğu dönemde benzerinin getirilmesi hususunda müteaddit defalar tehdîde (meydan okuma) bulunmuş (el-Bakara, 2/23; Yûnus, 10/38; Hûd, 11/13; et-Tûr, 53/33-34), fakat müşrikler -eğer mümkün olsaydı- kolay bir karşılık verme imkânı varken, canlarını ve mallarını ortaya koyarak Hz. Peygamber'le (sav) savaşmayı tercih etmişler ve sonunda savaşlarda sağ kalanların bazıları samimi Müslüman olmuşlardır. Kur'an'ın meydan okuması hala devam etmekte olup bu konuda başarı sağlayan birileri olmamıştır.

İslâm âlimleri genel olarak Kur'an'ın tek bir özelliği sebebiyle değil, birçok özelliği bünyesinde barındırması sebebiyle mucize olduğunu ifade etmişlerdir. Kur'an'ın üstünlüğünü ortaya koyan her bir özelliğe "vecih" denilmiştir. Mesela, son asrın önde gelen âlimlerinden Bediüzzaman Said Nursi Kur'an'ın en az kırk vecihle mucize olduğunu ifade etmiş ve bu konuyu *Sözler* adlı kitabının "Yirmi Beşinci Söz: Mu'cizât-ı Kur'âniye Risalesi" adlı bölümde geniş bir şekilde izah etmiştir. Câmiyyeti, şebâbeti ve her asırda her tabakaya uygun bir hitabının bulunması gibi özellikler bu vecihlerden bazılarıdır. Bu özellikleri sebebiyle Kur'an'ın "ilmî i'caz"ından da söz edilmekte ve bununla daha çok "pozitif bilimlerin gözlem ve deney yöntemlerine dayanarak tabiatın oluşum ve işleyişi hakkında ortaya koyduğu bazı bilgilerle Kur'an'ın Allah'ın varlığı, birliği ve âhîret hayatının mevcûdiyetine dikkat çekmek için tabiatın oluşumu ve işleyişine dair verdiği kısa bilgilerin uygunluk arzemesi" kastedilmektedir.

Nursi, Kur'an'ın ilmî mucizelerini tespitle ilgili bazı yöntemler geliştirmiş olup bunlardan biri de "cüzde külle ait kanunların gösterilmesi"dir. Kur'an bazen bir denizi bir ibrikte gösteriyor gibi pek geniş, çok uzun küllî düsturları ve umumi kanunları, basit ve âmî anlayışlara merhameten basit bir cüz'üyle, hususi bir hadise vasıtasıyla gösterir. Mesela Kur'an, bir insan, bir peygamber veya küçük bir toplulukla ilgili bir olayı anlatır, bu hikâyeye vasıtasıyla bu işin özünün bütün insanlar için geçerli olduğunu hatırlatır. Fıkıh Usûlü ilminde de, lafzın delâletleri çeşitli açılardan ele alınmış, manaya delâletinin şekli bakımından lafız; ibarenin delâleti, işârenin delâleti, nassın delâleti ve iktizanın delâleti şeklinde dört kısma ayrılmıştır. Bu da bir kelimenin farklı anlamlarından tek bir anlamı itibarıyla hepsi de birlikte geçerli ve doğru olmak üzere en az dört mana katmanına sahip olduğunu göstermektedir. Bu manalardan biri de illetteki ortaklık sebebiyle parçada geçerli olan hükmün bütünde de geçerli olması şeklindedir.

Yüce Allah Kur'an'da insanlar süs eşyası veya kullanacakları başka bir şeyi elde etmek için bazı maddeleri ateşe soktuklarından ve bunun neticesinde köpük oluştuğundan bahseder (er-Ra'd 13/17). Bu haliyle ayet insanların o dönemde yaptıkları birtakım işlemlerden de söz etmektedir. Ayrıca, ayet, o gün insanlar bilmesede, yaklaşık yüz elli yıl önce keşfedilen Flotasyon yöntemine de işaret etmektedir.

Flotasyonun kelime anlamı su üzerinde durma, yüzdürme demektir. En önemli cevher zenginleştirme yöntemlerinden biri hatta birincisi diyebiliriz. Cevher hazırlama süreçleri içinde minerallerin yüzey/arayüzey özelliklerinden

yararlanılarak, değerli mineralleri, değersiz minerallerden (gang) ayırmak amacıyla, kullanılır. Metallerin yaklaşık 2/3'ü ve diğer endüstriyel hammaddelerin kayalardan kazanılmasında, flotasyondan yararlanır. Minerallerin fizikokimyasal olarak, fitrî ya da reaktifler kullanılarak, hava sever (hidrofob) veya su sever (hidrofill) özellikleriyle ikiye ayrılmasıdır. Genelde toz boyutundaki mineraller suya karıştırılarak hidrofob olanlarının, suya verilen kabarcığa yapışarak üstte birikmesi ve ayrılmasını flotasyon olarak tarif edebiliriz.

Kur'an, madencilik sektöründe kullanılan flotasyon metoduna işaret ettiği gibi, insanlar açısından madenlerin önemine de işaret etmektedir. Kur'an'ın 114 suresinden birinin adı demir anlamına gelen "Hadid" dir. Demir ve bakırın yerden çıkarılarak işlenmesi Kur'an'da açıkça ifade edilmektedir. Demir, bakır, diğer metaller ve endüstriyel hammaddelerin bugün sahip olduğumuz teknolojiye ne kadar önemli olduğu çok iyi bilinen bir konudur. Burada, bir otomobilde yaklaşık 40, bir cep telefonunda yaklaşık 20 madenin kullanıldığını hatırlamalıyız. Kur'an "Dağları zemininize kazık ve direk yaptım" der (Nebe, 78/6-7). İnsanlar için çok önemli madenlere hazinedarlık (el-Bakara, 2/29) gibi dağların çok önemli faydaları Kur'an'da açıkça anlatılmaktadır.

Bu makalede bir taraftan Kur'an'ın flotasyon metoduna nasıl işaret ettiği irdelenirken, diğer taraftan flotasyon hakkında temel bilgi verilerek suretiyle Kur'an'ın işaret ettiği bu metodun önemine işaret edilecektir. İslâm geleneğinde her mesleğin bir peygamberle ilişkilendirilmesi adet haline gelmiştir. Madencilerin pirleri de Hz. Dâvûd (a.s.) ve Hz. Süleyman(a.s.)' ve Zülkarneyn'dir. Ayrıca İslâm'da din ve fen bilimleri arasında herhangi bir ayırım yapılmamıştır. Dini açıdan bakıldığında fen bilimlerinin, aynı zamanda, Allah'ın varlığını, birliğini ve bazı isim ve sıfatlarını gösteren bilim dalları oldukları görülür. İslam dininin temel özelliği açısından bakıldığında dinî ilimlerle fen bilimleri arasında herhangi bir fark bulunmamaktadır. Dolayısıyla bu makale aynı zamanla Kur'an'la bilim arasında köprü kurmanın bir örneği sayılır. Ayrıca, çalışma, "Zaman ihtiyarlandıkça Kur'an gençleşiyor, rumuzu tavazzuh ediyor" cümlesine çok açık bir bilimsel örnek teşkil etmektedir. Özetle, çalışma, insanların yaklaşık 150 yıldır kullandığı flotasyon yöntemine, yaklaşık 1440 yıl önce işaret etmiştir.

Anahtar kelimeler: Tefsir, Kur'an, Mucize, İlmi mucize, Flotasyon, Madencilik, Cevher Hazırlama, Teknoloji

1. Introduction

Almighty Allah gave various miracles to the prophets, which were generally related to popular topics at that time. When the Prophet Muhammad (PBUH) came as a prophet, poetry, and literature were among the most popular things among the Arabs (Nursi, 2019). The Qur'an was given to the Prophet Muhammad (PBUH) as a miracle of language and eloquence. In Islamic literature, the miracle of the Qur'an is expressed with the term "miraculousness of the Qur'an (i'câzü'l-Kur'an)." This term is generally defined as "the characteristic of

the Qur'an that it cannot be produced due to its literary superiority and richness of content" (Yavuz, 2000).

The miraculousness of the Qur'an is not accepted as an emotional miracle but as a mental miracle. In the period when the Qur'an was revealed, it made "tahaddi" (challenge) numerous times to bring it is like (Qur'an, at-Tûr, 53/33-34; Hûd, 11/13; Yûnus, 10/38. al-Bakara, 2/23) but the polytheists – if it were possible – preferred to fight the Prophet (PBUH) by revealing their lives and properties, when there was an easy response (Altuntaş & Şahin,2010). In the end, almost all of the survivors of the wars became Muslims, demonstrating that their previous opposition was unjust and their latter situation was just.

When the Qur'an came, it made provisions on every issue people needed or informed the truth about it. Similar to the fact that philosophy contained all sciences in the past, the Qur'an met the knowledge needs of people in every subject, and then various sciences emerged based on the Qur'an. There are many verses in the Qur'an about natural sciences. The primary purpose of these verses is to provide evidence for the existence and oneness of Allah. However, it is possible to extract technological clues from these verses. However, such subtleties can be sensed by experts in those subjects. This article aims to evaluate the sign of a verse in the Surah Ra'd to the flotation method, which was discovered about 150 years ago in the mineral processing area. This is a newly discovered miracle of The Quran.

According to The Quran, prophets are guides for the human being regarding this life and the hereafter. Most craftsmen have a Prophet as the patron of their craft (Nursi, 2016). For example, seamen have Noah (PUH), watchmakers have Joseph (PUH) and tailors have Idris (PUH), and so on (Nursi, 1992). We can understand from The Quran that the first miners were David (PUH), Solomon (PUH), and Dhulkarnejn. Mining and processing of copper and iron from the earth are expressed clearly in The Quran (Nursi, 2021b). Hadeed (iron) is the fifty-seventh surah of The Quran. Also, the names of surahs in The Quran are significant too. It is well known that iron, copper and other minerals are essential for human being technology. In addition, iron is essential for extracting all mines and all human being life. In addition, The Quran clearly expresses that human being sculpted stones for building houses thousands of

years ago (A'raf, 7/74). We must remember that approximately 40 minerals for a car and 20 minerals for a mobile phone are used. Minerals are essential for the human being. The Quran says, "Have We not made the earth as a bed, and the mountains as pegs?" (Naba, 6-7). Significant benefits of mountains for humanity, like the storage of minerals and water resources, are stated clearly in The Quran. Like many other blessings of Allah, Minerals are mined in two primary methods; open pit mining and underground mining (Aytekin, 1988). After mining, the first processes are mineral processing. Firstly, crushing and grinding operations are carried out to liberate the minerals from each other (İpekoğlu, 1989). Generally, ground ore size must be powder form (- 200 microns). Later ore and gangue can be separated from each other by using mineral dressing methods.

This study contains a new miracle of The Quran about flotation. Flotation is one of the most crucial mineral dressing methods. Two-thirds of the metals and other industrial raw materials are produced using flotation (Akar, 1987). Without flotation, human beings could not reach this modern technology. Mankind has been using flotation for about 150 years. The Quran implied a very high-level important method approximately 1440 years ago (Cevizci, 2021).

Allah created human beings on the most decent level and gave them a lot of blessings (Tin, 95/4). Similarly, mineral deposits that are blessings of Allah are placed in the world.

According to Islam, two of the measures of nisab are the amount of nisab relative to gold and silver. Without helping Allah, anyone cannot determine a reasonable economic criterion for one thousand five hundred years later because a thing's cost occurs according to supply and demand. Only Allah can determine a reasonable economic criterion for one thousand five hundred years later. If gold and silver were to be found in large quantities on earth, they could be found with technology, and thus the price would be much lower. In that case, there would be no reasonable criterion of wealth in our time. Also, the interest of human beings in gold or silver determines demand and price. For example, 30 years ago, in Türkiye, Deutsche Mark was generally used on the market. A few years later, the widely used DM (German Mark) coin was out of circulation. Any man except for Allah cannot determine a reasonable economic criterion for one thousand five hundred years later.

2. Scientific Miraculousness of the Qur'an

Islamic scholars agreed on the miracle of the Qur'an and saw its miraculousness not in a single feature but in the fact that it contains many features. Every feature that shows superiority is called "respect (vecih)." For example, Bediuzzaman Said Nursi, one of the leading scholars of the last century, stated that the Qur'an is a miracle in at least forty aspects (Nursi, 2019b), and he explained this subject in detail in the chapter of his book, Words, called "The Twenty-Fifth Word: The Miraculousness of The Qur'ân." Inclusiveness (containing very high and extensive information) (Nursi, 25th Word, First Light, Second Ray), the youth of The Qur'an (Nursi, 25th Word, First Light, Third Ray, Second Radiance), and having a suitable address for every stratum in every century (Nursi, 25th Word, First Light, Third Ray, Third Radiance) are some of these aspects. Considering these features of the Qur'an, some researchers have started to talk about the "Scientific Miraculousness " of the Qur'an and have written important works on this subject. Scientific Miraculousness, in other words, means making a scientific interpretation of the Qur'an. Since it is a newly emerging method of tafseer, we can say that a complete consensus has not been reached yet on the definition of scientific tafsir. Prof. Dr. Celal Kirca, whose work is mainly related to the relationship between science and the Qur'an, offers the following definition for scientific tafseer: "Tafseer that seeks to understand and explain the harmony between scientific data and the indications of the verses" (Kirca, 2012). This definition gives a general idea about the scientific tafsir or miraculousness of the Qur'an. The concept of the scientific miraculousness of the Qur'an is used in two senses:

The first is that the subjects related to positive sciences mentioned explicitly or implicitly in the Qur'an agree with the data of the sciences they are related to. There are many verses in the Qur'an about the formation and functioning of nature. The meanings of these verses coincide with the scientific results revealed by the sciences on the subject based on observation and experiment methods. According to this understanding, the closed expressions of the Qur'an are mostly tried to be explained with the data of modern sciences. *He has released the two seas; they meet each other. (But) there is a barrier between them. They do not mix* (ar-Rahman 55/19-20) and do not explain these two seas and why they do not mix. Scientific commentary writers' comments stating that

this is the meaning of the verse by determining the places where the two seas do not mix because one is salty and the other is not, or because one is hot and the other is cold, is considered scientific interpretation. As long as it is not said, "This is the exact meaning of the verse," and remains at the interpretation stage, there is no harm in such interpretation. With such interpretations, one of the meaning layers of the verse is pointed out.

Second, the Qur'an points to discoveries based on the indications of the verses. For example, Almighty Allah said, *"The fact that we carried their descendants in a full ship is proof for them. We have created many things for them to ride on like that ship"* (Yasin 36/41-42). This verse clearly states that Allah has created other vehicles, like ships, for people to board. If a commentator says that this verse refers to vehicles such as trains and airplanes, it would be an example of the scientific miraculousness of the Qur'an. However, it is not easy to say that the Qur'an points to things to be discovered before something is invented. After that thing is invented, a connection between the verse and the discovered object can be established. However, some methods can be developed for scientific interpretation. For example, Nursi has developed some methods for detecting the scientific miracles of the Qur'an, one of which is "showing the laws about a small part." The Qur'an sometimes shows broad, very long universal principles and general laws, as if showing a sea in an ewer, in a simple part, through a special event, out of mercy for simple and general understandings. For example, the Qur'an tells an event about a person, a prophet, or a small community, reminding through this story that the essence of this work is valid for all people (Nursi, 25th Word, First Light, Second Ray, Fifth Flash, Fourth Glow). In the science of Fiqh, the indications of the word have been discussed from various perspectives. In terms of the form of the sign of meaning, It is divided into four parts: the indication of the phrase, the indication of the sign, the indication of the text, and the indication of the iktizan (Z. Şa'bân, 1990). This shows that a word has at least four layers of meaning, all of which are valid and correct in terms of a single meaning from different meanings. One of these meanings is that the provision that is valid in part due to the partnership in the main reason is also valid on the whole.

3. What Is The Flotation?

Flotation word means to stand on water or to float. Flotation is a widely used ore beneficiation method that uses physicochemical property differences of minerals to separate gangue minerals from valuable ones from each other (Çilek, 2009). Two-thirds of the metals and other industrial raw materials are produced by flotation.

Before flotation separation, crushing and grinding operations are carried out to liberate the minerals from each other (usually smaller than 200 microns in size). In these processes, mostly done using water, the mineral surfaces interact with the water and many ions.

When minerals are poured into water, that is, in the form of pulp (muddy structure), the electrical charge of each mineral surface may differ as a result of the interaction of the ions available in the water and may differ or be differentiated as a result of the interactions of the elements that make up the minerals in the pulp. For this purpose, different chemical reagents are used in flotation cells. As a result of this process, the surface of a target mineral is rendered hydrophobic (waterproof) by using appropriate chemicals. Since the chemicals used only to make the target mineral hydrophobic, other minerals (mostly gangue) accompanying this mineral are hydrophilic. Thus, the difference in surface properties of valuable and non-value mineral/minerals that make up an ore occurred. What needs to be done after this stage is to separate the hydrophobic minerals from the hydrophilic minerals by using an appropriate mechanism. This is usually accomplished by dispersing the air as bubbles in the pulp. Figure 1 shows the rising of hydrophobic mineral particles attached to air bubbles up to the froth zone.

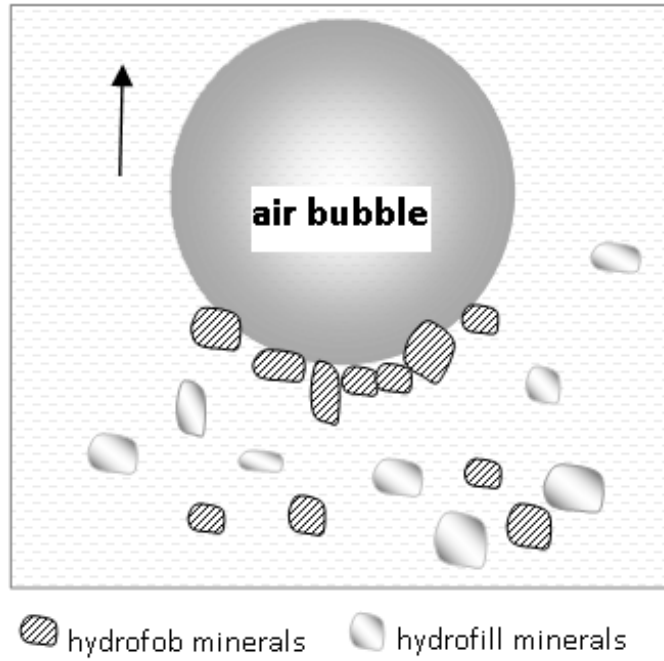


Figure 1. Movement of hydrophobic minerals with air bubbles during flotation (Çilek, 2009).

In the flotation cell, mineral-installed bubbles are accumulated enough at the froth zone and overflow. Usually, concentrate is taken as a froth product, and gangue minerals are left in the pulp (Figure 2). This way, the ore is separated into two products (Figure 3). In other words, flotation is a separation method applied to very small-sized minerals that other cheap mineral processing methods cannot separate. This study does not contain detailed information about flotation. Detailed information can be obtained from Çilek (2009), Atak (1990), etc., national and international literature.

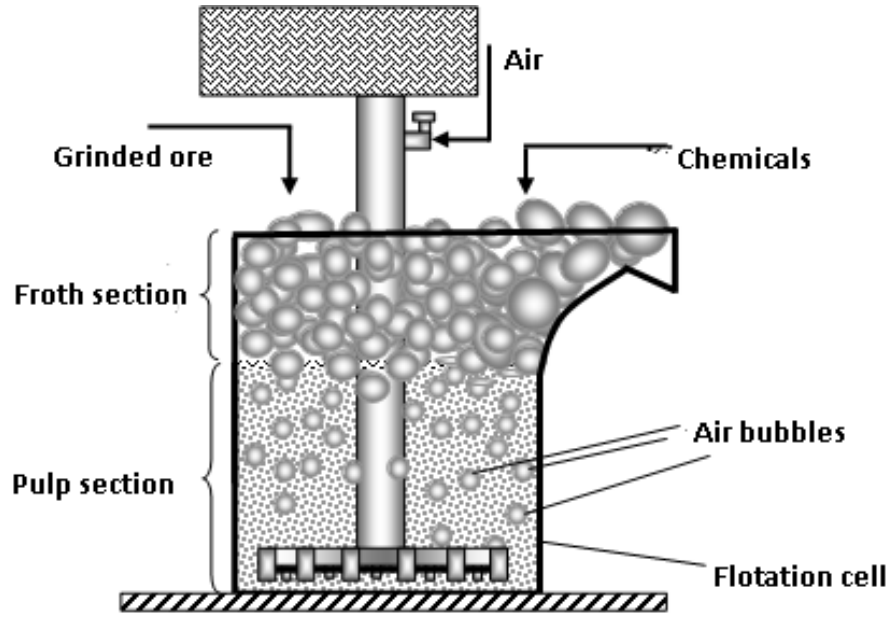


Figure 2. Laboratory scale flotation operation

4. History of Flotation

Flotation was initially used to refer to the floating of minerals heavier than water on the water's surface. The first studies in flotation were in the direction of collecting solids at the oil-water interface (Atak, 1990). The injection of gas into the pulp was first tried by the Bessel brothers in Germany in 1877. The same method was rediscovered in England and America and applied to the flotation of carbonates and sulfides. Although the use of gases obtained by the electrolysis of water was proposed by the Englishman Elmore (1904), it was not applied on an industrial scale. The creation of gas bubbles by vacuum was also found by Elmore in 1904 and became a success in the industry. This method is still used today (Atak, 1990). Many researchers have developed flotation. Also, many studies continue on flotation. Flotation is a critical area of research for mineral processing.



Figure3. Accumulating mineral installed bubbles at an industrial zinc ore dressing application (Northern miner, 06.05.2022)

5. The Sign of the Seventeenth Verse of Ra'd to Flotation

Ra'd surah is the thirteenth surah of The Quran. Ra'd means thunder, which is one of the majestic manifestations of the Creator. Lightning contains enormous electricity. The Qur'an also encourages the use of this electricity too. Translations of the Seventeenth Verse of Ra'd Surah are as followings:

1." He sends down from the sky, rain, and valleys flow according to their capacity, and the torrent carries a rising foam. Moreover, from that [ore] which they heat in the fire, desiring adornments and utensils, is a foam like it. Thus Allah presents [the example of] truth and falsehood. As for the foam, it vanishes, [being] cast off; but as for that which benefits the people, it remains on the earth. Thus does Allah present examples" (Sahih International, 11-06-2022).

2. "Allah sends down water from the heavens, and the riverbeds flow, each according to its measure, and the torrent carries a swelling scum. In like manner, from that metal they smelt in the fire to make ornaments and utensils, there arises scum. Thus does Allah depict truth and falsehood. As for the scum, it passes away as dross; but that which benefits mankind abides on the earth. Thus does Allah explain (the truth) through examples" (Abul Ala Maududi, 30-06-2022).

The verse clearly states the separation of valuable and useless things with foam. The phrase foam (zebed = زَبَدٌ) is used three times in the verse. In addition, the phrase "ore or ornament" is also clearly included in the verse. In addition, the separation of precious and worthless ore with foam is also expressed in the verse. Consequently, the Verse uses the flotation method for mineral processing (Cevizci, 2017). Mankind has been using flotation for approximately the last 150 years. The Quran implies using the flotation method approximately 1440 years ago. Also, the verse implies the separation of slag from valuable metals by smelting. The ones that accumulate on the top are called slag, and in general, the slags are waste; because they are less dense, these waste slags float like foam on the molten metal inside the melting pot. Of course, the verse can mean many things. It cannot be said that the verse expresses only what is mentioned above.

Someone can say that the Verse does not imply clear flotation. It is essential to open the door to the mind but not take the will from the hand. In addition, for the believers who lived until the 19th century, the subject was expressed in a style that would not contradict the mind.

6. Conclusion

The Quran introduces prophets as leaders of mankind in this life and hereafter (Nursi, 2021). Also, The Quran encourages to be the development of technology like prophets. There are encouragements and hints for many significant scientific developments in The Quran. One of them is the implied flotation in the 17th verse of the surah of Ra'd, which is the subject of this article. Human beings have been using flotation for approximately the last 150 years. The Quran implied using the flotation method approximately 1440 years ago. Flotation is a widely used ore beneficiation method that uses physicochemical property differences of minerals to separate gangue minerals from valuable ones from each other. Two-thirds of the metals and other industrial raw materials are produced using flotation. Without flotation, human beings would not have reached this modern technology. Similarly, The Quran implies and encourages that David (PUH) used iron with melting and likely technological developments.

The subject of this article is summed up very well in the following sentence: "As time gets older, The Quran gets younger; signs become evident (Nursi, 2019)". This article is a scientific example for the sentence. There are a lot of examples

of this in other sciences. In addition, it is possible that new examples can be discovered from The Quran. That is why it is so essential to work on it.

Acknowledgment

The author thanks Ali Bakkal and the referees for their contribution.

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