

# *The Role of Polgün in the Historical Development of Water Slides*

**Yusuf UZUN**

*Necmettin Erbakan University*

**Hüseyin ARIKAN**

*Necmettin Erbakan University*

**Nazmi TÜRKHAN**

*Polgün Waterparks&Attractions*

**Dila YAZ**

*Polgün Waterparks&Attractions*

### To Cite This Chapter

Uzun, Y., Arıkan, H., Türkhan, N., & Yaz, D. (2024). The Role of Polgün in the Historical Development of Water Slides. In F. Zerrin Saltan, H. Arıkan & Y. Uzun (Eds.), *Current Studies in Basic Sciences, Engineering and Technology 2024* (pp. 39-53). ISRES Publishing.

## Introduction

### *Purpose and Problem of the Research*

This research aims to examine the historical development, status, and potential future innovations of water slides and amusement park equipment. Evaluating the role and contributions of Polgün, one of the leading companies in the sector, is also part of this purpose. The main problem of the research is how to more effectively manage factors such as safety, durability, user satisfaction, and environmental impacts in the design and production of water slides and amusement park equipment, how to apply innovative solutions and technologies in the sector, and how to overcome the challenges faced by companies in this field. The research also aims to provide guiding suggestions to the stakeholders in the sector by presenting successful examples in the sector and the strategies of leading companies such as Polgün for these problems.

### Research Model

This research will use a descriptive research model that examines the historical development, current situation, and future innovations in the water slides and amusement park equipment industry. The research model will analyze the practices and strategies of the leading companies in the sector, especially Polgün, by using qualitative and quantitative data collection methods together.

## Research Questions

### *General Introduction of Water Slides*

Water parks are unique entertainment venues designed with the needs of people of all age groups in mind, where the community spends time together having fun with various water activities (Yerli & Aykut, 2021). These types of parks combine the refreshing and fun atmosphere that the water has to offer, allowing families and groups of friends to make unforgettable memories. Among the most popular and indispensable attractions of water parks are water slides. Each slide has been carefully designed to offer visitors a unique adventure. In the design of the slides, many factors are taken into consideration, such as slope, water flow, the need for safety barriers, cornering conditions, and the necessity of skiing without or with boots (Water slide, 2024). These factors are meticulously calculated and applied to ensure that the slides provide a safe and enjoyable experience.

Water slides are designed and manufactured by international and local safety standards. Each slide is designed to be fully compliant with the requirements and safety protocols set by the countries. In this way, the safety of visitors is kept at the highest level, and possible accidents are prevented. Well-designed and safe slides make it one of the most exciting and popular parts of water parks, contributing to making memories that visitors will want to return to again and again.

Water parks are places where people of all ages can enjoy their time and enjoy the fun of water with the various water activities and fun areas they offer. These parks both encourage physical activity and help holidaymakers relieve stress with the calming effect of water. This multifaceted attraction of water parks makes them among the indispensable holiday destinations of the summer months.

### Examples of the First Water Parks in History

#### *Asbury Park, New Jersey, ABD (1906)*

The origin of water slides dates to the early 20th century. The first water slide was installed in Asbury Park, New Jersey, United States in 1906. This slide became one of the popular entertainment venues of the period and laid the foundation for water slides. The image of the History of the Asbury Park Boardwalk course is shown in Figure 1.

#### **Figure 1**

#### *History of the Asbury Park Boardwalk*



Founded in 1871 by James Bradley, Asbury Park began as a world-class facility (Asbury Park Boardwalk, 2024). Despite the various problems of the period, the decline in tourism did not prevent the city from maintaining its unique entertainment culture

(Asbury Park Boardwalk, 2024). Today, the transformation continues, and the coastal road now retains the original glory of its past with modern design and innovative amenities. Asbury Park represents a major milestone in the history of water parks, with the water slide installed in 1906, and has played a major role in the evolution of water-based entertainment. The image of the 2024 event poster of the Asbury Park Boardwalk course is shown in Figure 2. The image of the Asbury Park Boardwalk course is shown in Figure 3.

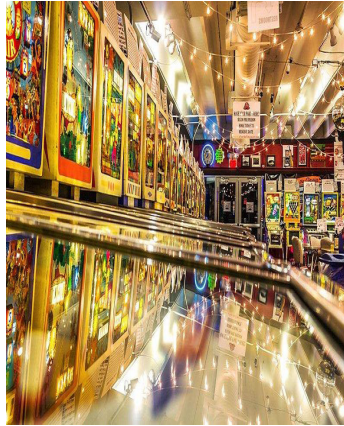
**Figure 2**

*Asbury Park, 2024 event poster*



**Figure 3**

*Asbury Park*



*Wicksteed Park, İngiltere (1926)*

Wicksteed Park is a historic amusement park in Kettering, England, founded in 1926 (Historic England, 2024). It was designed and built by Charles Wicksteed in 1926 (Historic England, 2024). One of the most important features that distinguishes this park from others in the world is that it is the oldest surviving example in England and has survived to the present day in the world (Historic England, 2024). The image of the color photograph of a colorful water slide watched by many visitors is shown in Figure 4.

**Figure 4**

*Color photograph of a colorful water slide watched by many visitors (1980)*



Today, Wicksteed Park continues to exist as a major attraction, preserving its historic heritage and continuing to offer modern leisure facilities and proving its quality with its membership in BALPPA (British Association of Amusement Parks, Piers, and Leisure Centres) (Wicksteed Charitable Trust, 2024). The image of Wicksteed Park's old original slide is shown in Figure 5.

**Figure 5**

*Evening Telegraph article showing Wicksteed Park's old original slide*



The image of a 1926 water slide designed and built by Charles Wicksteed is shown in Figure 6.

**Figure 6**

*A 1926 water slide designed and built by Charles Wicksteed*



*Wet'n Wild, Orlando, Florida (1977)*

Wet'n Wild Orlando was the flagship water park of Wet'n Wild, located on International Drive in Orlando, Florida, and owned by NBC Universal (Wikipedia contributors, 2024). The park closed in January 2017 after welcoming many visitors for 39 years. The image of Wicksteed Park 2024 event poster is shown in Figure 7.

**Figure 7**  
*Wicksteed Park, 2024 event poster*



The image of the black and white image of Wet'n Wild's artist rendering is shown in Figure 8.

**Figure 8**  
*Black and white image of Wet'n Wild's artist rendering*



The image of black and white image of Wet'n Wild's artist rendering is shown in Figure 9.

**Figure 9**  
*From Florida State Archives*



Wet'n Wild water parks around the world have continued to add state-of-the-art rides and push boundaries throughout their time in operation (Broadaway, 2021). In

2006, Wet'n Wild became the first water park in the country to offer waterproof electronic wristbands that allow guests to pay for everything in the park by simply scanning their bracelets (Broadaway, 2021). This innovation has allowed visitors to move around the park more comfortably and practically, and has significantly improved the user experience (Broadaway, 2021). The image of Wet'n Wild Orlando is shown in Figure 10.

**Figure 10**  
*Wet'n Wild Orlando*



In 1994, he was inducted into the International Association of Amusement Parks and Attractions Hall of Fame (Broadaway, 2021). Wet'n Wild Orlando has been named the world's original water park (Broadaway, 2021).

River Country, Walt Disney World, Florida (1976)

River Country is the first water park located at the Walt Disney World Resort, opened in 1976 (Disney Parks Wiki, 2024). This park is known as one of the first water parks in the world with a theme (Disney Parks Wiki, 2024). River Country welcomed approximately 4,000 visitors a day for 25 years and never reopened after its seasonal closure in 2001 (Disney Parks Wiki, 2024).

The nostalgic value of River Country is considered an important part of Disney World's history. The park was Disney's first contribution to the water park concept and formed the basis for today's water parks such as Blizzard Beach and Typhoon Lagoon. The image of River Country is shown in Figure 11.

**Figure 11**  
*River Country*



The image of Disney's Blizzard Beach Water Park is shown in Figure 12.

**Figure 12**

*Disney's Blizzard Beach Water Park*



The image of Disney's Blizzard Beach Water Park is shown in Figure 13.

**Figure 13**

*Disney's Blizzard Beach Water Park*



## **DEVELOPMENT AND POPULARIZATION OF WATER SLIDES**

### *Technological Advances and Design Changes*

Water slides have gained immense popularity over time, becoming an indispensable element of amusement and water parks. While the first water slides used heavy materials such as wood and metal, today light and durable materials such as fiberglass and plastic are preferred. These improvements have increased the safety and durability of slides. In addition, the integration of day-to-day scientific and engineering principles into slide design has resulted in smoother and faster sliding experiences. Computer-aided design (CAD) and hydrodynamic modeling have optimized the performance of water slides.

### *Thematic and Innovative Designs*

Water slides have become the most attractive and thematic elements of amusement and water parks. Equipped with creative themes, water slides not only offer visitors a gliding experience but also immerse them in fantastic stories. These themes provide park visitors with unique experiences that challenge the imagination and make every moment memorable. Each slide is enriched with thematic details, decorated with decorations, and designed according to the atmosphere of the respective themes.

Among the indispensable attractions of modern water parks, high-adrenaline slides such as free fall slides, tube slides, and funnel slides offer visitors truly breathtaking moments. Freefall slides captivate visitors with the sense of freedom and excitement they experience as they quickly fall from a high point. Tube slides take visitors on a fascinating journey through the play of light and dynamic movements of water as they glide quickly through a closed pipe. Funnel slides, on the other hand, provide unique experiences by feeling the centrifugal force while rotating rapidly in a wide and rotating funnel.

These exciting slides are not only for adrenaline junkies but also for visitors of all ages, encouraging them to try again and again. Full of high speed, excitement, and surprises, these attractions are located at the heart of modern water parks and attract millions of visitors every year. This dynamic and impressive world of water parks offers every visitor the opportunity to collect unforgettable memories.

### *Entertainment and Safety Standards*

Water slides have a highly specific and wide market. It is impossible to limit the designs of slides. For this reason, products can be produced by the standards with a safety specification that includes all issues such as dimensions and designs on a country basis. With safety requirements and design guidance rules, the European Standard is used for everyone related to water slides, especially designers, manufacturers, operators, and users (CEN, 2017).

Water parks are subject to high safety standards and regulations. Organizations such as the European Committee for Standardization (CEN) set standards to ensure the safe use of water slides. EN 1069 is a regulation that includes the safety standards set for water slides in Europe. This standard covers the requirements for the design, construction, and maintenance of slides. EN 1069 considers the slope of slides, water flow, safety barriers, and other important factors to ensure user safety.

In the United States, the F2376 standard, set by the American Society for Testing and Materials (ASTM), was created to ensure the safe use of water slides. This standard applies to the classification, design, manufacture, construction, inspection, large-scale modification and operation of water slide systems (ASTM, 2024). ASTM F2376 aims to keep user safety at the highest level and is an important reference point for water parks.

In China, the China Special Equipment Inspection and Research Institute (CSEI) is an agency that oversees the safety of water slides and other amusement park equipment. CSEI standards set requirements for the design, construction, and maintenance of water slides. These standards are important to ensure user safety and prevent potential accidents (CSEI, 2024). In addition, the International Organization for Standardization (ISO) also sets general safety standards for water parks and water slides (ISO, 2024). These standards are accepted worldwide. In this way, a harmonious and safe structure is provided for water parks and slides in different countries. Standards ensure credibility by setting consistent benchmarks for both businesses and consumers.

## **POLGÜN'S PLACE IN THE SECTOR**

### *History & Establishment*

Polgün started its activities in 2002 in Muğla-Menteşe. Since then, Polgün has become one of the rare companies in the field of steel construction and fiberglass manufacturing in its sector. In its modern factory of 70,000 m<sup>2</sup>, it not only imports water slides and playgrounds in the sector but also has made a name for itself in the sector by producing its own brand Splash Tower, Animations, Splash Adventure, Splash Zone, Mountain Coaster products and projects such as water parks, hotels, camping areas, and pools.

Our company, which made its first export in 2015, has implemented water park projects since that date and has signed more than 2000 projects around the world. Polgün has always pioneered innovations in the sector.

Polgün gained the title of being the first and only R&D center in Muğla in 2021. In this center, studies are carried out on sustainable solutions by following the latest technological developments. It is constantly on the lookout for innovative solutions to deliver unique, safe, and fun experiences. In addition, in 2024, the foundations of a new business line were laid in Muğla with the CNC model manufacturing branch, which includes 5-axis machining machines. This step aims to increase Polgün's capacity to produce its models for giant water slides and to reduce foreign dependency. In addition, this new factory will not only be limited to the production of water slides but also has the goal of producing air and land vehicles and the defense industry.

In the R&D center, projects are carried out on water slides that shape the sector in terms of engineering and materials. Polgün has signature slides such as Babochka, Monarch Butterfly, and Hydra, which show its presence in the industry. These unique slides are developed every year, equipped with new features and improved.

### *Polgün's Place in the Water Slide Industry*

As a company operating in the field of water slide and entertainment products manufacturing, Polgün provides services in water slide and entertainment products projects for aquaparks, hotels, campsites, and pools. Polgün, which carries out all processes such as design, project design, manufacturing, sales, and after-sales services within its structure, also carries out P&D and R&D studies in the R&D center within the company. Steel and composite productions are carried out in modern production facilities of 70,000 square meters, and it offers complete solutions to its customers by realizing turnkey water slide and children's playground projects.

Polgün offers comprehensive services from concept design to detailed engineering solutions for water parks and amusement parks. With its project management services, it ensures that projects are completed on time and within budget. Providing professional installation and assembly services for all the products it produces, Polgün increases customer satisfaction with post-installation support and maintenance services. The R&D center leads the industry by constantly developing innovative solutions and technologies for water slides and amusement park equipment while working on sustainable and environmentally friendly products. With its customer-oriented approach and quality service approach, it maintains its leading position in the sector and responds to the needs of the market with its innovative projects.

Polgün is a leader in the water park sector that distinguishes itself from its competitors with its strong position and innovative approach. Its adventure, which started in Muğla-Menteşe in 2002, has turned into a success story that has signed more than 2000 projects around the world today. Known for its high-quality steel construction and fiberglass manufacturing, Polgün has become a standard-setter in the sector with the projects it has carried out in its modern production facilities. While the company combines both entertainment and safety with its brands such as Splash Tower, Splash Adventure, and Splash Zone, it has been the pioneer of innovations in the sector with its unique designs and innovative solutions. Polgün's R&D center leads the industry in developing sustainable and environmentally friendly products in water park equipment. With its customer-oriented approach, superior quality understanding, and continuous innovation, Polgün stands out as an indispensable partner and a reliable brand in the water park sector.

### **EXAMPLES OF POLGÜN WATER PARKS AROUND THE WORLD**

#### *Mövenpick Waterpark Resort & Spa Soma Bay/ Egypt*

The Splash Tower and the pirate theme are used in perfect harmony in the Mövenpick Waterpark Resort & Spa Soma Bay project. Located in the Soma Bay region of Egypt, this luxury resort is designed to provide vacationers with an unforgettable experience (Tripadvisor, 2024). The resort's water park, "Splash Mania" has become a favorite among vacationers, with numerous slides and water attractions for all ages (Tripadvisor, 2024).

Splash Tower, a water park favorite, is equipped with a variety of water slides, water guns, interactive water games, and giant pouring buckets. It offers visitors an exciting and fun aquatic adventure. Large buckets tip over as they fill, pouring a huge wave of water over the guests underneath, which is one of the park's most popular moments. The pirate theme, on the other hand, adds a fun and adventurous atmosphere to the water park. Pirate ship-shaped playgrounds are decorated with water cannons and pirate flags. This theme sparks children's imaginations and provides a nostalgic and enjoyable experience for adults.

Splash Mania is equipped with a large number of slides with different heights and speeds. There are slides suitable for both children and adults, ensuring that all family members have a pleasant time. High-speed slides, wave pools, and special water

playgrounds for children provide holidaymakers with a unique experience with the various activities offered by the park. This facility has become one of the indispensable addresses of holidaymakers with its facilities that appeal to visitors of all ages. The image of the Movenpick Waterpark adult slide group is shown in Figure 14.

**Figure 14**

*Movenpick Waterpark adult slide group*



The image of the Pirate Theme & Splash Tower is shown in Figure 15.

**Figure 15**

*Pirate Theme & Splash Tower*



*Cube Concept /Greece*

Cube Concept water park projects include various slide groups and water attractions. Each slide group has special designs that prioritize the safety and fun of users. The children's slide group attracts the attention of children with its colorful and attractive design, while it is built by high safety standards.

Extensive R&D studies have been carried out for colorful and attractive designs, and special patterns suitable for the theme have been integrated into the slides. As a result of these R&D studies, unique slides have emerged that attract attention and offer a visual feast in every corner of the park. Cube Concept redefines the imagination and sense of fun of visitors of all ages by providing users with a unique water park experience. The image of the Cube Concept slide group is shown in Figure 16.

**Figure 16.**

*Cube Concept slide group*



*Kosino / Ukraine*

Kosina is a mega attraction located in Ukraine. It offers visitors an unforgettable and entertaining experience with water slides and playgroups for adults and children. In this water park, there is the Babochka slide, which emerged as a result of our R&D studies and which we describe as our signature slide today. The Babochka slide is specially designed for this attraction, with a height of 12 meters and a length of 55 meters (Kosino Aquapark, 2024).

The Babochka slide stands out as the most eye-catching and popular attraction of the park. With its unique design and adrenaline-filled structure, it gives its visitors exciting moments. In addition, there are 10 different types of slides and children's playgrounds in the park. Each slide is equipped according to the latest safety standards, ensuring that visitors of all age groups can enjoy themselves safely and enjoyably.

These diverse and impressive attractions offered by the park spark the imaginations of both children and adults while allowing families to collect unforgettable memories that can be spent together. The water park has become one of the most popular entertainment centers in the region with its innovative designs and high-security measures. The image of the Kosina slide group is shown in Figure 17.

**Figure 17**

*Kosina slide group*



The image of the Babochka slide is shown in Figure 18.

**Figure 18**  
*Babochka slide*



The image of the Space Bowl slide is shown in Figure 19.

**Figure 19**  
*Space Bowl slide*



#### *Nirvana Cosmopolitan / Türkiye*

Nirvana Cosmopolitan is a large water park located in Lara, Antalya that offers a variety of water slides and water attractions (Nirvana Hotels, 2024). The hotel's water park offers a variety of water slides and attractions for children and adults. The water park features high-speed slides, wave pools, and special water playgrounds for children. With our R&D studies, the world's largest children's playground with an underwater theme has been designed. In this project, a system has been established in which mechanical, dynamic, and static systems work together, reaching heights that interactive and conventional parks cannot reach. In addition, it is aimed to improve the motor skills and reflexes of the users with interactive games with mechanical and hydraulic infrastructure in this park. The images of the Nirvana Cosmopolitan slide group are shown in Figure 19.

**Figure 19**  
*Nirvana Cosmopolitan slide group*



## Polgün's Goals and Vision

Polgün is taking firm steps towards becoming a globally recognized brand in the water slides and entertainment products sector. The company's long-term goals and vision are based on a strategy focused on sustainability, innovation, and global growth, and it aims to consolidate its leadership in the industry.

### Strategic Objectives

Polgün aims to increase its exports with the offices it has opened in Europe and America to have an effective presence in the international market. Developing environmentally friendly production processes and water-saving projects are among Polgün's priorities. It closely follows the latest technological developments and integrates these technologies into its products. The R&D center in Muğla allows Polgün to develop projects that shape the sector in terms of engineering and materials. Earning the title of being the first and only R&D center, the company is constantly on the lookout for innovative solutions to deliver unique, safe, and enjoyable experiences.

### Vision

Polgün's vision is to become a world leader in the water slides and entertainment products industry.

- Customer Satisfaction: To provide the highest quality service to customers and to develop products that exceed their expectations.
- Innovation and Quality: To lead innovations in the sector by constantly developing new products and technologies.
- Environment and Community Sensitivity: To develop projects that are sensitive to the environment and beneficial to society, to take an active role in social responsibility projects by adhering to the principle of sustainability.
- Training and Development: To have the most competent and knowledgeable staff in the sector, giving importance to the continuous training and development of employees.

In line with these goals and vision, Polgün aims to strengthen its presence in the sector and reach a wider customer base by reinforcing its leadership in the global market. The company's growth strategy is based on the principles of innovation and sustainability and is constantly evolving in this direction.

## References

- Yerli, Ö., & Aykurt, E. (2021). Su parklarının planlama ve tasarım kriterlerinin saptanması ve Düzce su parkı örneğinde değerlendirilmesi. *Düzce Üniversitesi Bilim ve Teknoloji Dergisi*, 9, 1002-1019. <https://doi.org/10.29130/dubited.853448>
- Wikipedia contributors. (2024, Temmuz 24). Su kaydırağı. *Wikipedia, The Free Encyclopedia*. [https://tr.wikipedia.org/wiki/Su\\_kayd%C4%B1ra%C4%9F%C4%B1](https://tr.wikipedia.org/wiki/Su_kayd%C4%B1ra%C4%9F%C4%B1)
- Asbury Park Boardwalk. (2024, Temmuz 24). *About. Asbury Park Boardwalk*. <https://apboardwalk.com/about/>
- Historic England. (2024). Water Chute at Wicksteed Park. *Historic England*. <https://historicengland.org.uk/listing/the-list/list-entry/1437706>
- Wicksteed Charitable Trust. (2024). *About. Wicksteed Park*. <https://wicksteedpark.org/the-wicksteed-charitable-trust/>

- Wikipedia contributors. (2024, Temmuz 24). Wet 'n Wild Orlando. *Wikipedia, The Free Encyclopedia*. [https://en.wikipedia.org/wiki/Wet\\_%27n\\_Wild\\_Orlando](https://en.wikipedia.org/wiki/Wet_%27n_Wild_Orlando)
- Broadaway, W. (2021, Temmuz 27). Making Waves at Wet 'n Wild. *Orange County Regional History Center*. <https://www.thehistorycenter.org/making-waves-at-wet-n-wild/>
- Disney Parks Wiki. (2024, Temmuz 24). Disney's River Country. *Disney Fandom*. [https://disney.fandom.com/wiki/Disney%27s\\_River\\_Country](https://disney.fandom.com/wiki/Disney%27s_River_Country)
- Türk Standardları Enstitüsü. (2017). *TS EN 1069-1: Su kaydıraqları - Bölüm 1: Güvenlik gerekleri ve test metotları*. Ankara: TSE.
- European Committee for Standardization. (2017). *EN 1069-1: Water slides - Part 1: Safety requirements and test methods*. Brussels: CEN.
- ISO. (2024). International Organization for Standardization. Retrieved from <https://www.iso.org/home.html>
- ASTM. (2024). *ASTMF2376 - Standard Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems*. Retrieved from <https://www.astm.org/Standards/F2376.htm>
- CSEI. (2024). China Special Equipment Inspection and Research Institute Standards for Water Slides. Retrieved from <http://www.csei.org.cn>
- Tripadvisor. (2024). Mövenpick Waterpark Resort & Spa Soma Bay. *Tripadvisor*. [https://www.tripadvisor.com/Hotel\\_Review-g488095-d302486-Reviews-Movenpick\\_Waterpark\\_Resort\\_Spa\\_Soma\\_Bay-Soma\\_Bay\\_Red\\_Sea\\_and\\_Sinai.html](https://www.tripadvisor.com/Hotel_Review-g488095-d302486-Reviews-Movenpick_Waterpark_Resort_Spa_Soma_Bay-Soma_Bay_Red_Sea_and_Sinai.html)
- Kosino Aquapark. (2024). Aquapark. *Kosino*. <https://kosino.ua/aquapark/?lang=en>
- Nirvana Hotels. (2024). Nirvana Cosmopolitan. *Nirvana Hotels*. <https://www.nirvanahotels.com.tr/en/hotels/nirvana-cosmopolitan>

### About the Authors

**Yusuf UZUN**, PhD, is an Assistant Professor of Computer Engineering at Necmettin Erbakan University in Konya, Turkey. He holds a PhD in Mechanical Engineering from Necmettin Erbakan University. His main areas of interest are artificial intelligence, autonomous systems and augmented reality applications. He also works as the Rector's Advisor at Selçuk University.

**E-mail:** [yuzun@erbakan.edu.tr](mailto:yuzun@erbakan.edu.tr), **ORCID:** [0000-0002-7061-8784](https://orcid.org/0000-0002-7061-8784)

**Huseyin ARIKAN** is a Professor of Mechanical Engineering at Seydişehir Ahmet Cengiz Engineering Faculty, Necmettin Erbakan University in Konya, Turkey. He is a Professor of Mechanical Engineering at Necmettin Erbakan University. His main areas of interest are Composite Materials, Fracture Mechanics, and Materials design and Manufacturing.

**E-mail:** [harikan@erbakan.edu.tr](mailto:harikan@erbakan.edu.tr), **ORCID:** [0000-0003-1266-4982](https://orcid.org/0000-0003-1266-4982)

**Nazmi TÜRKHAN**, He works as the R&D director of Polgün Waterparks & Attractions R&D Center. He has a bachelor's degree in mechanical engineering from Pamukkale University.

**E-mail:** [nazmi.turkhan@polgun.com](mailto:nazmi.turkhan@polgun.com), **ORCID:** [0009-0002-2866-6544](https://orcid.org/0009-0002-2866-6544)

**Dila YAZ**, she works as a researcher in the Patent and Intellectual Property Rights Department of Polgün Waterparks & Attractions R&D Center. She has a bachelor's degree in mathematics from Muğla Sıtkı Koçman University. His master's degree continues.

**E-mail:** [dila.yaz@polgun.com](mailto:dila.yaz@polgun.com), **ORCID:** [0009-0000-3435-127X](https://orcid.org/0009-0000-3435-127X)

### ***Similarity Index***

The similarity index obtained from the plagiarism software for this book chapter is 16%..