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### Eğitim

Derece	Bölüm/Program	Üniversite	Yıl
Lise	Fen Bilimleri	TED Ankara Koleji Vakfı Özel Lisesi	2006
Lisans	Makina Mühendisliği	TOBB Ekonomi ve Teknoloji Üniversitesi	2010
Y.Lisans	Makina Mühendisliği	TOBB Ekonomi ve Teknoloji Üniversitesi	2012
Doktora	Makina Mühendisliği	TOBB Ekonomi ve Teknoloji Üniversitesi	2016

### Akademik Deneyim

Görev Ünvanı	Görev Yeri	Yıl
Araştırma Görevlisi	TOBB Ekonomi ve Teknoloji Üniversitesi	2010-2012
Araştırma Görevlisi	TOBB Ekonomi ve Teknoloji Üniversitesi	2012-2016
Doktora Sonrası Araştırmacı	ETÜ Hydro, Su Türbini Tasarım ve Test Merkezi	2016-2017
Yarı zamanlı öğretim üyesi	Türk Hava Kurumu Üniversitesi	2016-2017(bahar dönemi)
Öğretim Üyesi (Yrd.Doç.Dr)	Türk Hava Kurumu Üniversitesi	Nisan 2017-Ocak 2018
Bölüm Başkan Yardımcısı (Yrd.Doç.Dr)	Türk Hava Kurumu Üniversitesi	Nisan 2017-Ocak 2018
Öğretim Üyesi	Çankaya Üniversitesi	Ocak 2018-...

### İdari Görevleri

Görev Ünvanı	Görev Yeri	Yıl
Bölüm Başkan Yardımcısı (Yrd.Doç.Dr)	Türk Hava Kurumu Üniversitesi	Nisan 2017-Ocak 2018

## **Görev Aldığı Araştırma Projeleri**

1. **Yürütücü**, Deneysel Metotlar ve Hesaplamalı Akışkanlar Dinamiği Yardımıyla Biyomimetik Kanat Yapısının Aeroakustik ve Aerodinamik Performansa Etkisinin İncelenmesi, Çankaya Üniversitesi BAP Projesi, 2021-2022.
2. **Araştırmacı**, Experimental investigation of geometrical parameters on solar chimney power plant performance, ODTU BAP PROJESİ, 2020-2021.
3. **Danışman**, Enerji Üretiminde Verimlilik, IPA 2013 CS01c, Avrupa Birliği Projesi, 2019-2020.
4. **Doktora Sonrası Araştırmacı**, TÜBİTAK (110M539), "Hidroelektrik Santral Bileşenlerinin Yerli Olarak Tasarımı ve Üretimi (MILHES) ", Bütçe: 20 Milyon TL, 2021.
5. **Bursiyer**, "MILHES, Yerli Hidroelektrik Santral Projesi", Tübitak Kamag destekli (113G109), bütçe: 23 milyon TL (4 milyon TL'si TOBB ETÜ'nün payı olmak üzere), Şubat 2015-Şubat 2021.
6. **Bursiyer**, "Su Türbini Tasarım ve Testleri Alt yapısı", Eylül 2011-Mart 2016.
7. **Bursiyer**, TÜBİTAK 1001 projesi (110M539), "Sesüstü Kaviteelerde Lazer Enerjisi Yardımıyla Akış Modellemesi ve Kontrolü", 1 Mayıs 2011-1 Mayıs 2013, 81250 TL bütçeli.

## **Burslar ve Ödüller**

1. TÜBİTAK 2242, Bölge Üçüncülüğü, Bitirme Projesi Danışmanı, 2019
2. 110M539 kodlu Tübitak projesinden 2010-2012 seneleri arasında burs alınmıştır.
3. 113G109 kodlu Tübitak Kamag projesinden 2015-2016 seneleri arasında burs alınmıştır

## **Bilimsel Kuruluşlara Üyelikler**

1. TMMOB Makina Mühendisleri Odası
2. Türk Isı Bilimi ve Tekniği Derneği
3. American Society of Mechanical Engineers (ASME)

## **Eserler**

### **A. Uluslararası hakemli dergilerde yayımlanan makaleler**

1. Kocak, E., Turkoglu, H., Ayli, E., A Comparative Study Of Multiple Regression And Machine Learning Techniques For Prediction Of Nanofluid Heat Transfer, Journal of Thermal Science and Technology, ASME (2021), (Accepted for publication)
2. Ulucak, O. Kocak, E., Bayer, O., Beldek, U., Yapici, E., **Ayli, E.**, Developing and Implementation of an Optimization Technique for Solar Chimney Power Plant With Machine Learning, May 2021, 143 (5), <https://doi.org/10.1115/1.4050049>.
3. Alrawi, M., Ozgirgin, E., **Ayli E.**, Solar Chimney Performance for Different Seasons Under Varying Solar Irradiance and temperature distribution, Journal of Energy Resources Technology, <https://doi.org/10.1115/1.4048533>, June 2021.
4. **Ayli, E.**, Kocak, E., Turkoglu, H., Numerical Investigation of Rod-Airfoil Configuration Aeroacoustic Characteristics Using FFWCS-WILLIAMS-HAWKINGS Equations, Journal of Thermal Engineering, vol:7, No:2, pp: 58-70, 2021
5. Nsaif, O., Al-Rawe, M., Ozgirgin E., **Ayli E.**, Numerical Investigation and Performance Analysis of Solar Power Plant, Journal of Cleaner Production, vol: 276, 2020, 10.1016/j.jclepro.2020.122908.
6. Ayli, E., Modeling of Mixed Convection in an Enclosure with using Multiple Regression, ANN and ANFIS Models, Proceedings of the iMechE, PartC, Journal of Mechanical Engineering Science, vol 234 (15), 3078-3093, 2020, DOI: 10.1177/0954406220914330
7. Ulucak, O., **Ayli, E.**, ANN, and ANFIS Performance Prediction models for Francis type Turbines, Journal of Thermal Sciences and Technology, 40, 1, 87-97, 2020.
8. Bayer, O., **Ayli, E.**, Optimization of Vortex Promoter Parameters to Enhance Heat Transfer Rate in Electronic Equipment, Journal of Thermal Science and Energy Applications, vol: 12(2), 2020.
9. **Ayli, E.**, Cavitation in Hydraulic Turbines, International Journal of Heat and Technology, Vol. 37, No.1, pp: 334-344, 2019.
10. **Ayli, E.**, Experimental Thermal Performance Analysis of Rectangular Fins Based on Artificial Neural Network Approach and Correlation, Muğla Journal of Science and Technology, (Accepted), 2019.
11. **Ayli, E.**, Ince, E., Review of Enhancement of Heat Transfer From Rectangular Fin Arrays, Muğla Journal of Science and Technology, DOI: 10.22531/muglajsci.445045, 2019 3.
12. Celebioglu, K., Aradag, S., Altuntas, B., **Ayli, E.**, Rehabilitation of Francis Turbines of Power Plants with Computational Methods", Hittite J Sci Eng, ISSN 2148 4171, 2017.
13. **Ayli, E.**, Bayer, O., Aradag S., Experimental investigation and CFD analysis of rectangular profile FINS in a square channel for forced convection regimes", International Journal of Thermal Sciences, Vol. 109, pp. 279-290, 2016.
14. **Ayli, E.**, Celebioglu, K., Aradag, S., "Determination and generalization of the effects of design parameters on Francis turbine runner performance", Engineering Applications of Computational Fluid Mechanics, Vol 10 (1), pp. 547-566, 2016.
15. Yilmaz, I., **Ayli, E.**, Aradag, S., "Investigation of the Effects of Length to Depth Ratio on Open Supersonic Cavities Using CFD and Proper Orthogonal Decomposition," The Scientific World Journal, vol. 2013, Article ID 810175, 2013. (doi:10.1155/2013/810175.)
16. **Ayli, E.**, Turk, C., Aradag, S., "Experimental Investigation of Cooling of Electronic Equipment",

International Journal of Materials, Mechanics and Manufacturing, Vol. 1., No.2, pp. 153-157, 2013.

17. Yılmaz, I., **Ayli, E.**, Aradag, S., “A review of control methods for cavity flows and feasibility of laser energy deposition as an actuator”, International Journal of Flow Control, Vol. 4 (1-2), pp. 29-46, January 2013 (Invited).

**B. Uluslararası bilimsel toplantılarda sunulan ve bildiri kitabında (Proceedings) basılan bildiriler :**

28. Ilgın, A., Caparoglu., B., Burakan, M., Ozcan, O., Celik, M., Kocak,E., **Ayli,E.**, Aerodynamic Drag Reduction Of Trailer Trucks Using External Attachments, 23. Isı Bilimi ve Tekniği Kongresi, 2021.

27. **Ayli., E.**, Kocak, E., Turkoglu, H., Convective Heat Transfer Enhancement With Nanoparticles, 23. Isı Bilimi ve Tekniği Kongresi, 2021.

26. **Ayli,E.**, Passive and Active Control of Acoustic Resonance in Cavity Flows using FWH Equations,9th International Conference on Advanced Technologies, 01-03 July 2020, İstanbul, Turkey

25. Unal Y., Altıntaş, B., Buyuksolak F., Ulucak, O., **Ayli E.**, Celebioglu, K., Aradag, S., Investigation of a Francis Turbine Performance Using CFD and Site Efficiency Measurements, Hefat 2020, Istanbul, Turkey.

24. Kocak, E., **Ayli, E.**, Türkoglu, H., Numerical Analysis of Aerodynamic and Aeroacoustic Characteristics of Subsonic Rectangular Cavity with Different Aspect Ratios, 5th International Anatolian Energy Symposium, 15-17 April 2020, Trabzon, Turkey.

23.Ulucak O., Kartal, M., Mendi, C., Surgun,K., Günce, C., Kantar, E., Kocak, E., **Ayli, E.**, Performance Evaluation of reverse engineered wind tunnel axial fan, 5th International Anatolian Energy Symposium, 15-17 April 2020, Trabzon, Turkey.

22.Deniz, A., **Ayli, E.**, Numerical Analysis of Mixed Convection in a Channel with Open Cavity, 5th International Conference on Advances in Mechanical Engineering, Istanbul 2019.

22.Guzey, K., Sinan, B., Yalcin, B., Kocak, E., **Ayli, E.**, Genc, M.S., An Experimental and Numerical Study of Flow Over Naca Profile with Wavy Leading Edge Modification, 5th International Conference on Advances in Mechanical Engineering, Istanbul 2019.

21.**Ayli, E.**, Kocak, E., Turkoglu, H., Numerical Acoustic Investigation Of Rod-Airfoil Configuration Using Ffowcs-Williams-Hawkings Equations, Uluslararası Isı Bilimi ve Tekniği Kongresi, 11-14 Eylül 2019, Kocaeli

20.Nsaif, O., Al-Rawe, M., Ozgirgin E., **Ayli E.**, Numerical Study Of The Influence Of Chimney Configurations In A Solar Chimney Power Plant, Uluslararası Isı Bilimi ve Tekniği Kongresi, 11-14 Eylül 2019, Kocaeli

19.**Ayli.**, Bayer, O., Delikli Akış Yönlendiricilerin Isı Transferine Olan Etkisinin İncelenmesi, 4.Uluslararası Katılımlı Anadolu Enerji Sempozyumu, 2018.

18.**Ayli,E.**, Celebioglu, K., Aradag, S., “CFD Based Hill Chart Construction and Similarity Study of Prototype and Model Francis Turbines for Experimental Tests”, 12th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Temmuz 2016.

17. **Ayli, E.**, Kaplan, A., Cetinturk, H., Demirel, G., Celebioglu, K., Aradag, S., “CFD Analysis of 3D flow

for 1.4 MW Francis turbine and model turbine manufacturing”, 35th Computers and Information in Engineering Conference, August 2015.

16. Demirel, G., **Ayli, E.**, Celebioglu, K., Tascioglu, Y., Aradag, S., “Experimental determination of cavitation characteristics of hydraulic turbines, World Congress on Engineering, July 2015.

15. **Ayli, E.**, Kavurmaci, B., Cetinturk, H., Kaplan, A., Celebioglu, K., Aradag, S., Tascioglu, Y., “Design and Construction of a Hydroturbine Test Facility”, 67th Annual Meeting of APS Division of Fluid Dynamics, November 2014.

14. Kaplan, A., Cetinturk, H., Demirel, G., **Ayli, E.**, Celebioglu, K., Aradag, S., “CFD Aided Design and Production of Hydraulic Turbines”, 67th Annual Meeting of APS Division of Fluid Dynamics, November 2014.

13. **Ayli, E.**, Kiyici, F. Bayer, O., Aradag, S., “Experimental investigation of heat transfer and pressure drop over rectangular profile fins placed in a square channel”, Convective Heat and Mass Transfer (CONV 2014), June 2014.

12. **Ayli, E.**, Kavurmaci, B., Celebioglu, K., Aradag, S., “Design and construction of an experimental test rig for hydraulic turbines”, ASME 12th Biennial Conference on Engineering Systems Design and Analysis, June 2014.

11. Kavurmaci, B., Akin, H., **Ayli, E.**, Celebioglu, K., Aradag, S., Design of an experimental test stand for Francis type hydraulic turbines, Power Engineering, Energy and Electrical Drives (POWERENG), pp. 876-880, 2013

10. **Ayli, E.**, Turk, C., Aradag, S., "Experimental Investigation of Cooling of Electronic Equipment", 2nd International Conference on Fluid Dynamics and Thermodynamics (FDTT 2013), March 2013.

9. Yilmaz, I., **Ayli, E.**, Aradag, S., “Reduced order modeling for supersonic cavity flows”, 10th WSEAS International Conference on Fluid Mechanics, Milan, Italy, January 2013.

8. **Ayli, E.**, Design of Francis Turbine with Using CFD Tools, When China Meets Turkey: Energy Matters Conference, İstanbul, Aralık, 2012.

7. **Ayli, E.**, Yilmaz, I., Aradag, S., " Numerical Analysis of Supersonic Cavity Flow", 6th International Conference on Thermal Systems: Theory and Applications, May 2012.

6. Yılmaz, I., **Ayli, E.**, Aradag, S., "Control of Supersonic Cavity Flow", 6th International Conference on Thermal Systems: Theory and Applications, May 2012.

5. **Ayli, E.**, Turk, C., Aradag, S., "Computational Analysis of Cooling of Electronic Systems with Vortex Promoters", ASME 7th International Conference on Computational Heat and Mass Transfer, July 2011.

4. E. Kocak., **E. Ayli.**, Turkoglu. H., Kanat Profili - Silindir Konfigürasyonunun Aerodinamik Ve Aeroakustik Performansının Sayısal Analizi, 14. Ulusal Tesisat Mühendisliği Kongresi, 17-20 Nisan 2019

3. **Ayli, E.**, Demirel, G., Hidro Türbinlerde Kavite- Derleme Makalesi, IV. Enerji Verimliliği Kongresi, Enerji ve Gelecek, TMMOB Makine Mühendisleri Odası, 13-14 Ekim 2017(davetli).

2. **Ayli, E.**, Kavurmaci, B., Akin, H., Aytac, Z., Ayancik, F., Aradag, U., Mert, B., Celebioglu, K., Aradag, S., Unver, O., Tascioglu, Y., "Su Türbini Tasarımı ve Testleri Merkezi", Ulusal Isı Bilimi ve Tekniği Konferansı (ULIBTK 2013), Eylül 2013.

1. **Ayli, E.**, Aradag, S., "İki Boyutlu Süpersonik Kavite Akışı Simülasyonu" ULIBTK'11 18. Ulusal Isı Bilimi

ve Tekniği Kongresi, Eylül 2011.

### **C. Kitap Bölümleri:**

1. Özgirgin, E., **Ayli, E.**, Clean Energy Generation in Residential Green Buildings, The Institution of Engineering and Technology (IET), DOI: 10.1049/PBPO155E, 2019
2. Aradağ, S., Yazıcıoğlu, A.G., **Ayli, E.**, Gulben.G., Kakaç, S., Heat Exchangers, Comprehensive Energy Systems, Comprehensive Energy Systems, Elsevier, 2017 (davetli).

### **D. Diğer yayınlar :**

1. **Ayli, E.**, "Süpersonik Kavitelerdeki Akışın Sayısal Analizi", yüksek lisans tezi, TOBB Ekonomi ve Teknoloji Üniversitesi, Haziran 2012
2. **Ayli, E.**, "Francis Tipi Türbinlerin Sayısal Yöntemler İle Tasarımı, Parametre Optimizasyonu Ve Model Testlerinin Sayısal Alt Yapısının Geliştirilmesi", Doktora tezi, TOBB Ekonomi ve Teknoloji Üniversitesi, Temmuz 2016

### **E. Değerlendirmede Olan Yayınlar:**

1. Çelebioğlu, K., Taşcıoğlu, Y., Aradağ, S., Çetintürk, H., **Ayli, E.**, . Comparison of inline pipe and conventional Francis turbines based on computational fluid dynamics and hill chart analysis. (under review)
2. Celebioglu, K., **Ayli, E.**, Ulucak, O., Critical Decision Making on Hydropower Plant Rehabilitation, (Under Review)
3. Ulucak, O., Nsaif, O., Bayer, O., Özgirgin, E., **Ayli, E.**, Developing and Implementation of an Optimization Technique for Solar Chimney Power Plant with Machine Learning, (Under Review)
4. Kocak, E., **Ayli, E.**, Turkoglu, H., Flow Control Techniques With The Application of Artificial Neural Network, Gaussian Process Regression, Support Vector Machines and CFD Technique, (Under Review)
5. Kocak, E., **Ayli, E.**, Turkoglu, H., A Comparative Study of Multiple Regression, and Machine Learning Techniques In Prediction of Nanofluid Heat Transfer Efficiency, (Under Review)

### **F. Verilen Dersler:**

1. Computational Fluid Dynamics
2. Fluid Mechanics
3. Computational Tools for Mechanical Engineers (MATLAB)
4. Internal Combustion Engines
5. Thermal System Design
6. Thermodynamics
7. Thermal-Fluid Design

8. Heat Transfer
9. Turbomachines

### **G. Bilimsel Sekreteryası:**

1. Enerji ve Çevre Konferansı: Ülkemizde Durum, TOBB ETU, 13-14 Mart 2014, Ankara, Düzenleyenler: Prof. Dr. Sadık Kakaç, Dr. Özgür Ünver, Bilimsel Sekreteryası: **Ece Aylı**, Ece Özkaya
2. Enerji ve Çevre Konferansı: Enerji Verimliliği Yapı ve Sanayi Uygulamaları, TOBB ETU, 19-20 Mart 2015, Ankara, Düzenleyenler: Prof. Dr. Sadık Kakaç, Dr. Özgür Ünver, Bilimsel Sekreteryası: **Ece Aylı**, Gizem Demirel.

### **H. Verilen Eğitimler**

1. Hidrotürbinlerin Tasarımı Eğitimi, MMO Ankara, Kasım 2015.
2. Anova Ansys Kullanıcılar Sempozyumu, Hidrotürbinlerin Tasarımı, Kasım 2015.
3. Turbomakinelerin Sayısal Yöntemler ile Modellenmesi, MMO Ankara, Haziran 2020.

### **I. VERİLEN TEZLER**

1. Osama Nsaif, Optimization of geometric parameters for performance of solar chimney power plant, Msc Thesis, Cankaya University, 2019.
2. Ahmet Deniz, Numerical Analysis of Forced Convection Heat Transfer in open cavities, Msc Thesis, Cankaya University, 2019
3. Maisarh Al-Rawe, Numerical Study on the performance of solar chimney power plant under varying divergence angle and solar radiation conditions MSc Thesis, 2020.
4. Oğuzhan Ulucak, Development of Rehabilitation methodology for old turbines , MSc Thesis, (2020)

### **I. ATIFLAR**

#### **ATIFLAR**

#### **Eser Adı: Experimental Investigation of Cooling of Electronic Equipment**

1. Aadheeswaran, N., Computational Study of Different Profile Fins in a Forced Convection Regimes, International Journal of Recent Trends in Engineering & Research (IJRTER), (2019):579-586

#### **Eser: Investigation of the Effects of Length to Depth Ratio on Open Supersonic Cavities Using CFD and Proper Orthogonal Decomposition**

1. Gelisli, A., et al. "Computational Fluid Dynamics and Proper Orthogonal Decomposition based control of flow over supersonic cavities." 25th AIAA/CEAS Aeroacoustics Conference. (2019).
2. Luo, W, et al. "Spatiotemporal Characterization and Suppression Mechanism of Supersonic Inlet Buzz with Proper Orthogonal Decomposition Method." *Energies* 13.1 (2020): 217.
3. Hairudin, W. M., et al. "A Qualitative Study of the Wind Noise Cavity Inside of a Two Way Radio." IOP Conf. Series: Materials Science and Engineering 815(2020)
4. Mironov, K., et al., "CFD ПІДХІД ДЛЯ АНАЛІЗУ ХАРАКТЕРИСТИК ПОТОКУ ВИСОКОНАПІРНОЇ РАДІАЛЬНО-ОСЬОВОЇ ГІДРОТУРБІНИ." Вісник Національного технічного університету" ХПІ". Серія:" Гідравлічні машини та гідроагрегати" 2 (2019): 106-111

[Eser: Experimental investigation and CFD analysis of rectangular profile FINS in a square channel for forced convection regimes](#)

1. Homod, R. Z., Abood, F. A., Shrama, S. M., & Alshara, A. K. (2019). Empirical correlations for mixed convection heat transfer through a fin array based on various orientations. *International Journal of Thermal Sciences*, 137, 627-639.
2. Sarper, B., Saglam, M., & Aydin, O. (2018). Experimental and numerical investigation of natural convection in a discretely heated vertical channel: Effect of the blockage ratio of the heat sources. *International Journal of Heat and Mass Transfer*, 126, 894-910.
3. Ozsipahi, M., Subasi, A., Gunes, H., & Sahin, B. (2018). Numerical investigation of hydraulic and thermal performance of a honeycomb heat sink. *International Journal of Thermal Sciences*, 134, 500-506.
4. Oh, Y. W., Choi, Y. S., Ha, M. Y., & Min, J. K. (2019). A numerical study on the buoyancy effect around slanted-pin fins mounted on a vertical plate (Part-II: Laminar mixed convection). *International Journal of Heat and Mass Transfer*, 132, 565-576.
5. Sreenivasulu, B., Kirti, N. S., Krishna, G. V., Sree, B. R., & Ramesh, K. V. (2017, April). A numerical study on enhanced heat transfer in a lid driven cavity with and without fins. In *2017 International conference of Electronics, Communication and Aerospace Technology (ICECA)* (Vol. 2, pp. 611-616). IEEE.
6. Aylı, E., & Bayer, Ö. (2020). Optimization of Vortex Promoter Parameters to Enhance Heat Transfer Rate in Electronic Equipment. *Journal of Thermal Science and Engineering Applications*, 12(2).
7. Adhikari, R. C., Wood, D. H., & Pahlevani, M. (2020). An experimental and numerical study of forced convection heat transfer from rectangular fins at low Reynolds numbers. *International Journal of Heat and Mass Transfer*, 163, 120418.
8. Oumer, A. N., & Alias, A. F. (2019). Investigation of Fin Spacing for Heat Transfer Enhancement in Cross Flow Over Tubes Between Two Parallel Plates. *JOURNAL OF SCIENCE AND APPLIED ENGINEERING*, 2(1).
9. İnci, A. B. (2018). *Numerical and experimental analysis for comparison of square, cylindrical and plate fin arrays in external flow* (Master's thesis, MIDDLE EAST TECHNICAL UNIVERSITY).
10. Bayer, Ö. (2018). Tam gelişmiş türbülanslı iç akışta kanatçıklı yapılar üzerinde zorlanmış taşınım korelasyonu eldesi: Parametrik deneysel analiz.
11. Gupta, P., Sharmab, A. K., & Kumarc, R. (2018). Simulation of Internally Fitted Baffles in STHEX for Different Reynolds Number. *International Journal of Applied Engineering Research*, 13(6), 278-285.
12. Aylı İnce, Ü. E. (2018). Review of Enhancement of Heat Transfer From Rectangular Fin Arrays.
13. Aylı İnce, Ü. E. (2019). Prediction of Nusselt Number of Rectangular Fins Using Artificial Neural Network Model.
14. Roy, K., & Das, B. (2020). Convective heat transfer from an inclined isothermal fin array: A computational study. *Thermal Science and Engineering Progress*, 17, 100487.



15. Krishna, V. G., & Dineshkumar, L. (2019, December). Numerical analysis on enhancement of heat transfer in micro-heat sink using dimpling surface. In *AIP Conference Proceedings* (Vol. 2200, No. 1, p. 020059). AIP Publishing LLC.
16. Yang, Y., Ting, D. S., & Ray, S. (2020). On flexible rectangular strip height on flat plate heat convection. *International Journal of Heat and Mass Transfer*, 150, 119269.
17. BAYER, O. Tam Gelişmiş Türbülanslı İç Akışta Kanatçıklı Yapılar Üzerinde Zorlanmış Taşınım Korelasyonu Eldesi: Parametrik Deneysel Analiz. *Uludağ University Journal of The Faculty of Engineering*, 23(1), 417-430.
18. Sathe, A., & Sanap, S. (2020). Experimental Analysis of Effect of Slitted Rectangular Fins on Heat Sink Under Natural Convection Heat Transfer. *International Journal of Ambient Energy*, 1-37.
19. Siddiqui, J. A., Lahane, S., Gadekar, A. V., & Lokawar, V. L. (2020). Experimental and Computational Evaluation of Pressure Drop and Heat Transfer Characteristics in Rectangular Channel with Helix Grooved Profile Pin Fins. In *Advances in Energy Research*, Vol. 1 (pp. 729-741). Springer, Singapore.
20. Ayli, E. Prediction Of Nusselt Number Of Rectangular Fins Using Artificial Neural Network Model. *Mugla Journal of Science and Technology*, 5(2), 13-22.
21. Shim, M., Ha, M. Y., & Min, J. K. (2020). A numerical study of the mixed convection around slanted-pin fins on a hot plate in vertical and inclined channels. *International Communications in Heat and Mass Transfer*, 118, 104878.
22. İNCİ, A. B., & BAYER, Ö. (2019). Experimental and numerical study on heat transfer performance of square, cylindrical and plate heat sinks in external transition flow regime. *Isi Bilimi ve Teknigi Dergisi/Journal of Thermal Science & Technology*, 39(2).
23. Kargarsharifabad, H. (2020). Optimization of arrangement of conducting fins and insulated obstacles inside a cavity: the couple of numerical solutions and genetic algorithm methods. *Journal of Thermal Analysis and Calorimetry*, 1-13.

#### Eser: Determination and generalization of the effects of design parameters on Francis turbine runner performance

1. Aradag, S., Akin, H., & Celebioglu, K. (2017). CFD based design of a 4.3 MW Francis turbine for improved performance at design and off-design conditions. *Journal of Mechanical Science and Technology*, 31(10), 5041-5049.
2. Celebioglu, K., Aradag, S., Ayli, E., & Altintas, B. (2018). Rehabilitation of Francis Turbines of Power Plants with Computational Methods. *Hittite Journal of Science & Engineering*, 5(1), 37-48.
3. Chen, X., & Chen, J. (2020). Optimization of the Impeller Geometry for an Automotive Torque Converter Using Response Surface Methodology and Desirability Function. *Open Journal of Applied Sciences*, 10(07), 455.
4. Миронов, К. А., & Олексенко, Ю. Ю. (2017). Визначення та аналіз впливу розрахункових параметрів на ефективність радіально-осьових гідротурбін.
5. ПАРАМЕТРИВ, В., ЕФЕКТИВНІСТЬ, Н., & ГІДРОТУРБІН, Р. О. (2017). КА МИРОНОВ, ЮЮ ОЛЕКСЕНКО. *Bulletin of NTU" KhPI*, (42), 1264.
6. Geng, L., & Escaler, X. (2020). Assessment of RANS turbulence models and Zwart cavitation model empirical coefficients for the simulation of unsteady cloud cavitation. *Engineering Applications of Computational Fluid Mechanics*, 14(1), 151-167.
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