

Doç. Dr. AHMET FATİH TABAK

Kişisel Bilgiler

Web: <https://www.webofscience.com/wos/author/record/R-9187-2018>

Uluslararası Araştırmacı ID'leri

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ScopusID: 16239623800

Yoksis Araştırmacı ID: 110475

Eğitim Bilgileri

Post Doktora, Max Planck Gesellschaft, Max Planck Institute for Intelligent Systems, Physical Intelligence, Almanya 2014 - 2017

Bütünleşik Doktora, Sabancı Üniversitesi, Institute of Science, Mechatronics Engineering, Türkiye 2007 - 2012

Yüksek Lisans, Sabancı Üniversitesi, Institute of Science, Electrical Engineering and Computer Sciences, Türkiye 2005 - 2007

Lisans, Sabancı Üniversitesi, Faculty of Engineering and Natural Sciences, Mechatronics Engineering, Türkiye 2000 - 2005

Yaptığı Tezler

Doktora, Computational and microhydrodynamic modeling and experiments with bio-inspired swimming robots in cylindrical channels, Sabancı Üniversitesi, Institute of Science, Mechatronics Engineering, 2012

Yüksek Lisans, Simulation based experiments of traveling-plane-wave-actuator micropumps and microswimmers, Sabancı Üniversitesi, Institute of Science, Electrical Engineering and Computer Science, 2007

Araştırma Alanları

Robotik ve Mekatronik Sistemler, Mikro ve Nano Robotlar, Biyoenstrümantasyon ve MEMS, MEMS, Isı ve Madde Transferi, Akışkanlar Dinamiği

Akademik Unvanlar / Görevler

Doç. Dr., İstanbul Ticaret Üniversitesi, Mühendislik Fakültesi, Mekatronik Mühendisliği Bölümü, 2023 - Devam Ediyor
Dr. Öğr. Üyesi, Kadir Has Üniversitesi, Faculty of Engineering and Natural Sciences, Mechatronics Engineering, 2020 - 2023

Dr. Öğr. Üyesi, Bahçeşehir Üniversitesi, Faculty of Engineering and Natural Sciences, Mechatronics Engineering Department, 2018 - 2020

Dr. Öğr. Üyesi, İstanbul Okan Üniversitesi, Faculty of Engineering and Natural Sciences, Mechatronics Engineering, 2017 - 2018

Araştırmacı, Max Planck Gesellschaft, Max Planck Institute for Intelligent Systems, Physical Intelligence, 2014 - 2017

Yrd. Doç. Dr., İstanbul Ticaret Üniversitesi, Mühendislik Fakültesi, Mekatronik Mühendisliği Bölümü, 2012 - 2014

Verdiği Dersler

Programming II, Lisans, 2023 - 2024
Industrial Automation, Lisans, 2023 - 2024
Graduation Project (3), Lisans, 2023 - 2024
Engineering Optimization, Lisans, 2023 - 2024
Programming I, Lisans, 2023 - 2024
Mechatronics System Design II, Lisans, 2023 - 2024
Mechatronics System Design I, Lisans, 2023 - 2024

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **MESENCHYMAL STEM CELL DIFFUSION INTEGRATED MECHANO- BIOLOGY ANALYSIS OF 3D SCAFFOLDS**
Sahin M., Tabak A. F., Sendur G. K., Ghassabi A. A.
TISSUE ENGINEERING - PART A, cilt.29, sa.11-12, ss.1391, 2023 (SCI-Expanded)
- II. **Transducer Technologies for Biosensors and Their Wearable Applications**
Polat E. O., Cetin M. M., TABAK A. F., Güven E. B., Uysal B. Ö., Arsan T., Kabbani A., Hamed H., Gül S. B.
Biosensors, cilt.12, sa.6, 2022 (SCI-Expanded)
- III. **Elevation and Azimuth Rotational Actuation of an Untethered Millirobot by MRI Gradient Coils**
Erin O., Gilbert H. B., TABAK A. F., Sitti M.
IEEE Transactions on Robotics, cilt.35, sa.6, ss.1323-1337, 2019 (SCI-Expanded)
- IV. **Temperature Gradients Drive Bulk Flow Within Microchannel Lined by Fluid-Fluid Interfaces**
Amador G. J., Ren Z., TABAK A. F., Alapan Y., Yasa O., Sitti M.
Small, cilt.15, sa.21, 2019 (SCI-Expanded)
- V. **3D-Printed Microbotic Transporters with Recapitulated Stem Cell Niche for Programmable and Active Cell Delivery**
Yasa I. C., TABAK A. F., Yasa O., Ceylan H., Sitti M.
Advanced Functional Materials, cilt.29, sa.17, 2019 (SCI-Expanded)
- VI. **3D-Printed Biodegradable Microswimmer for Theranostic Cargo Delivery and Release**
Ceylan H., Yasa I. C., Yasa O., TABAK A. F., Giltinan J., Sitti M.
ACS Nano, cilt.13, sa.3, ss.3353-3362, 2019 (SCI-Expanded)
- VII. **Hydrodynamic Impedance Correction for Reduced-Order Modeling of Spermatozoa-Like Soft Micro-Robots**
TABAK A. F.
Advanced Theory and Simulations, cilt.2, sa.2, 2019 (SCI-Expanded)
- VIII. **Controllable switching between planar and helical flagellar swimming of a soft robotic sperm**
Khalil I. S., TABAK A. F., Seif M. A., Klingner A., Sitti M.
PLoS ONE, cilt.13, sa.11, 2018 (SCI-Expanded)
- IX. **Soft erythrocyte-based bacterial microswimmers for cargo delivery**
Alapan Y., Yasa O., Schauer O., Giltinan J., TABAK A. F., Sourjik V., Sitti M.
Science Robotics, cilt.3, sa.17, 2018 (SCI-Expanded)
- X. **Swimming Back and Forth Using Planar Flagellar Propulsion at Low Reynolds Numbers**
Khalil I. S. M., TABAK A. F., Hamed Y., Mitwally M. E., Tawakol M., Klingner A., Sitti M.
Advanced Science, cilt.5, sa.2, 2018 (SCI-Expanded)
- XI. **Magnetic propulsion of robotic sperms at low-Reynolds number**
Khalil I. S., TABAK A. F., Klingner A., Sitti M.

- Applied Physics Letters, cilt.109, sa.3, 2016 (SCI-Expanded)
- XII. **Computationally-validated surrogate models for optimal geometric design of bio-inspired swimming robots: HELICAL swimmers**
Tabak A. F., Yesilyurt S.
Computers and Fluids, cilt.99, ss.190-198, 2014 (SCI-Expanded)
- XIII. **Improved kinematic models for two-link helical micro/nanoswimmers**
Tabak A. F., Yesilyurt S.
IEEE Transactions on Robotics, cilt.30, sa.1, ss.14-25, 2014 (SCI-Expanded)
- XIV. **Simulation-based analysis of flow due to traveling-plane-wave deformations on elastic thin-film actuators in micropumps**
TABAK A. F., Yesilyurt S.
Microfluidics and Nanofluidics, cilt.4, sa.6, ss.489-500, 2008 (SCI-Expanded)

Diğer Dergilerde Yayınlanan Makaleler

- I. **Simulation Studies for Motion Control of Multiple Biohybrid Microrobots in Human Synovial Fluid with Discontinuous Reference Signals**
TABAK A. F.
International journal of advances in engineering and pure sciences (Online), cilt.3, ss.1-9, 2021 (Hakemli Dergi)
- II. **Non-Contact Micromanipulation Of A Single E. Coli Minicell**
Sürer J., TABAK A. F.
Avrupa Bilim ve Teknoloji Dergisi, sa.26, ss.16-21, 2021 (Hakemli Dergi)
- III. **Bernoulli-Equation-Based Robotic Model for Non-Contact Magnetic Micromanipulation**
Sürer J., TABAK A. F.
Avrupa Bilim ve Teknoloji Dergisi, sa.24, ss.47-52, 2021 (Hakemli Dergi)
- IV. **Bilateral control simulations for a pair of magnetically-coupled robotic arm and bacterium for in vivo applications**
TABAK A. F.
Journal of Micro-Bio Robotics, cilt.16, sa.2, ss.199-214, 2020 (ESCI)
- V. **Independent Joint Control Simulations on Adaptive Maneuvering of a Magnetotactic Bacterium via a Single Permanent Magnet**
TABAK A. F.
Avrupa Bilim ve Teknoloji Dergisi, cilt.0, ss.50-59, 2020 (Hakemli Dergi)
- VI. **Independent actuation of two-tailed microrobots**
Khalil I. S., TABAK A. F., Hamed Y., Tawakol M., Klingner A., Gohary N. E., Mizaikoff B., SİTTİ M.
IEEE Robotics and Automation Letters, cilt.3, sa.3, ss.1703-1710, 2018 (Scopus)
- VII. **Mechanical Rubbing of Blood Clots Using Helical Robots Under Ultrasound Guidance**
Khalil I. S. M., Mandy D., El Sharkawy A., Moustafa R. R., TABAK A. F., Mitwall M. E., Hesham S., Hamdi N., Klingner A., Mohamed A., et al.
IEEE Robotics and Automation Letters, cilt.3, sa.2, ss.1112-1119, 2018 (Scopus)
- VIII. **Hydrodynamic Impedance of Bacteria and Bacteria-Inspired Micro-Swimmers: A New Strategy to Predict Power Consumption of Swimming Micro-Robots for Real-Time Applications**
Tabak A. F.
Advanced Theory and Simulations, cilt.1, sa.4, 2018 (Scopus)
- IX. **Rubbing Against Blood Clots Using Helical Robots: Modeling and In Vitro Experimental Validation**
Khalil I. S. M., TABAK A. F., Sadek K., Mahdy D., Hamdi N., SİTTİ M.
IEEE Robotics and Automation Letters, cilt.2, sa.2, ss.927-934, 2017 (Scopus)

Kitap & Kitap Bölümleri

- I. **Mathematical modeling to the motion control of magnetic nano/microrobotic tools performing in bodily fluids, especially blood/plasma**
Tabak A. F.
Nanotechnology for Hematology, Blood Transfusion, and Artificial Blood, Denizli,A,Nguyen,T A,Rajan,M,Alam,M F,Rahman K, Editör, Elsevier BV Academic Press, Amsterdam, ss.83-112, 2022
- II. **Chapter Twelve - Bioinspired and Biomimetic Micro-Robotics for Therapeutic Applications**
TABAK A. F.
Handbook of Biomechanics, Segil J, Editör, Elsevier Inc., Amsterdam, ss.457-523, 2019
- III. **Numerical experiment-based modeling for bio-inspired microswimmers: Modeling hydrodynamic interactions acting on individual bio-inspired microswimmer**
TABAK A. F., YEŞİLYURT S.
LAP Lambert Academic Publishing GmbH Co. KG., 2016
- IV. **Simulations on traveling-plane-wave-based micropumps and microswimmers: Modeling flow-fields and rigid-body kinematics of fully-submerged bio-inspired microsystems with deforming extremities**
TABAK A. F., YEŞİLYURT S.
LAP Lambert Academic Publishing GmbH Co. KG, 2016

Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **Analysis of functionally graded and uniform scaffolds based on mechano-biology and cell diffusion**
ŞAHİN M., TABAK A. F., KIZILTAŞ ŞENDUR G.
Virtual Physiological Human-VPH 2022, Porto, Portekiz, 6 - 09 Eylül 2022
- II. **Simulated Motion Control of a School of Microrobots with Random Walks**
TABAK A. F.
The IEEE (Türkiye Section) 6th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT2022), Ankara, Türkiye, 20 - 22 Ekim 2021
- III. **Orbital characterization study for the hydrodynamic micro tweezers: simulated performance with a passive particle**
Sürer J., DÜZENLİ S., TABAK A. F.
The IEEE (Türkiye Section) 5th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT2021), Bolu, Türkiye, 21 - 23 Ekim 2021
- IV. **Numerical Investigations on the Hydrodynamic Interaction between an E. Coli Minicell and a Micro Tweezers**
TABAK A. F.
The IEEE (Türkiye Section) Innovations in Intelligent Systems and Applications Conference (ASYU2021), Elazığ, Türkiye, 6 - 08 Ekim 2021
- V. **Orbital characterization study for the hydrodynamic micro tweezers: simulated performance with an active particle**
DÜZENLİ S., Sürer J., TABAK A. F.
The IEEE (Türkiye Section) 5th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT2021), Bolu, Türkiye, 21 - 23 Ekim 2021
- VI. **Initial Study Towards the Integrated Design of Bone Scaffolds Based on Cell Diffusion, Growth Factor Release and Tissue Regeneration**
ŞAHİN M., TABAK A. F., KIZILTAŞ ŞENDUR G.
The ASME 2020 International Mechanical Engineering Congress and Exposition (IMECE), OR, Portland, Amerika Birleşik Devletleri, 16 - 20 Kasım 2020
- VII. **Motion Control for Biohybrid Multiscale Robots**
TABAK A. F.

2020 Innovations in Intelligent Systems and Applications Conference, ASYU 2020, İstanbul, Türkiye, 15 - 17 Ekim 2020

- VIII. **A Simulated Control Method for a Magnetically-Coupled Bacterium and Robotic Arm**
TABAK A. F.
2020 International Conference on Manipulation, Automation, and Robotics at Small Scales, MARSS 2020, Toronto, Kanada, 13 - 17 Temmuz 2020
- IX. **Simulated Bilateral Motion Control of a Magneto-Tactic Bacterium via an Open Kinematic Chain**
TABAK A. F.
17th International Conference on Ubiquitous Robots, UR 2020, Kyoto, Japonya, 22 - 26 Haziran 2020, ss.587-592
- X. **Adaptive Motion Control of Modified E. Coli**
TABAK A. F.
2nd International Congress on Human-Computer Interaction, Optimization and Robotic Applications, HORA 2020, Ankara, Türkiye, 26 - 27 Haziran 2020
- XI. **Manipulation of Non-Magnetic Microbeads Using Soft Microrobotic Sperm**
El-Etriby A. E., Klingner A., TABAK A. F., Khalil I. S.
3rd International Conference on Manipulation, Automation and Robotics at Small Scales, MARSS 2018, Nagoya, Japonya, 4 - 08 Temmuz 2018
- XII. **Swimming in low reynolds numbers using planar and helical flagellar waves**
Khalil I. S. M., TABAK A. F., Seif M. A., Klingner A., Adel B., Sitti M.
2017 IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2017, Vancouver, Kanada, 24 - 28 Eylül 2017, cilt.2017-September, ss.1907-1912
- XIII. **Positioning of drug carriers using permanent magnet-based robotic system in three-dimensional space**
Khalil I. S., Alfar A., TABAK A. F., Klingner A., Stramigioli S., Sitti M.
2017 IEEE International Conference on Advanced Intelligent Mechatronics, AIM 2017, Munich, Almanya, 3 - 07 Temmuz 2017, ss.1117-1122
- XIV. **Near-surface effects on the controlled motion of magnetotactic bacteria**
Khalil I. S. M., TABAK A. F., Hageman T., Ewis M., Pichel M., Mitwally M. E., El-Din N. S., Abelman L., Sitti M.
2017 IEEE International Conference on Robotics and Automation, ICRA 2017, Singapore, Singapur, 29 Mayıs - 03 Haziran 2017, ss.5976-5982
- XV. **Targeting of cell mockups using sperm-shaped microrobots in vitro**
Khalil I. S. M., TABAK A. F., Hosney A., Klingner A., Shalaby M., Abdel-Kader R. M., Serry M., Sitti M.
6th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechanics, BioRob 2016, Singapore, Singapur, 26 - 29 Haziran 2016, cilt.2016-July, ss.495-501
- XVI. **Sperm-shaped magnetic microrobots: Fabrication using electrospinning, modeling, and characterization**
Khalil I. S. M., TABAK A. F., Hosney A., Mohamed A., Klingner A., Ghoneima M., Sitti M.
2016 IEEE International Conference on Robotics and Automation, ICRA 2016, Stockholm, İsveç, 16 - 21 Mayıs 2016, cilt.2016-June, ss.1939-1944
- XVII. **Dar kanallar içerisinde hareket eden manyetik mikro yüzücülerin direnç-kuvveti-teorisi tabanlı modellenmesi**
Erman A. G., TABAK A. F.
2014 Türkiye Otomatik Kontrol Ulusal Toplantısı (TOK), Kocaeli, Türkiye, 11 - 13 Eylül 2014
- XVIII. **Resistive force theory based modeling and simulation of surface contact for swimming helical micro robots with channel flow**
Erman A., Tabak A. F.
2014 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM 2014, Besançon, Fransa, 8 - 11 Temmuz 2014, ss.390-395
- XIX. **In-channel experiments on vertical swimming with bacteria-like robots**
Tabak A. F., Yesilyurt S.
2013 26th IEEE/RSJ International Conference on Intelligent Robots and Systems: New Horizon, IROS 2013, Tokyo,

Japonya, 3 - 08 Kasım 2013, ss.4596-4601

- XX. **Yürüyen düzlem dalgaların piezoseramikler ile implementasyonu**
TABAK A. F., BOZKURT A., YEŞİLYURT S.
2013 Türkiye Otomatik Kontrol Ulusal Toplantısı, Malatya, Türkiye, 26 - 30 Eylül 2013
- XXI. **Experimental validation of a CFD-based resistive force coefficient set for rotating helical tails in cylindrical Channels**
Tabak A. F., Yesilyurt S.
7th Subrata Chakrabarti International Conference on Fluid Structure Interaction, FSI 2013, Gran Canaria, İspanya, 10 - 12 Nisan 2013, cilt.129, ss.201-213
- XXII. **Experiments on in-channel swimming of an untethered biomimetic robot with different helical tails**
TABAK A. F., Yesilyurt S.
2012 4th IEEE RAS and EMBS International Conference on Biomedical Robotics and Biomechatronics, BioRob 2012, Rome, İtalya, 24 - 27 Haziran 2012, ss.556-561
- XXIII. **Experiment-based Kinematic validation of numeric modeling and simulated control of an untethered biomimetic Microrobot in channel**
TABAK A. F., Yesilyurt S.
2012 12th IEEE International Workshop on Advanced Motion Control, AMC 2012, Sarajevo, Bosna-Hersek, 25 - 27 Mart 2012
- XXIV. **Comparison on experimental and numerical results for helical swimmers inside channels**
TABAK A. F., Temel F. Z., Yesilyurt S.
2011 IEEE/RSJ International Conference on Intelligent Robots and Systems: Celebrating 50 Years of Robotics, IROS'11, San Francisco, CA, Amerika Birleşik Devletleri, 25 - 30 Eylül 2011, ss.463-468
- XXV. **Validated reduced order models for simulating trajectories of bio-inspired artificial micro-swimmers**
TABAK A. F., Yesilyurt S.
ASME 2010 8th International Conference on Nanochannels, Microchannels, and Minichannels, ICNMM2010 Collocated with 3rd Joint US-European Fluids Engineering Summer Meeting, Montreal, Kanada, 1 - 05 Ağustos 2010, ss.57-63
- XXVI. **Modeling and Simulations of the Motion of Bio-Inspired Micro Swimming Robots**
TABAK A. F., YEŞİLYURT S.
ASME 2010 First Global Congress on NanoEngineering for Medicine and Biology, Houston, Texas, Amerika Birleşik Devletleri, 7 - 10 Şubat 2010
- XXVII. **Simulation-based analysis of 3D flow inside a micropump with passive valves**
TABAK A. F., Solak A., Erdem E., Akcan C., Yesilyurt S.
ASME International Mechanical Engineering Congress and Exposition, IMECE 2007, Seattle, WA, Amerika Birleşik Devletleri, 11 - 15 Kasım 2007, cilt.11 PART B, ss.849-856
- XXVIII. **Numerical analysis of a planar wave propagation based micropropulsion system**
TABAK A. F., Yeşilyurt S.
ASME International Mechanical Engineering Congress and Exposition, IMECE 2007, Seattle, WA, Amerika Birleşik Devletleri, 11 - 15 Kasım 2007, cilt.11 PART B, ss.781-790
- XXIX. **Numerical Analysis of the 3D Flow Induced by Propagation of Plane-Wave Deformations on Thin Membranes Inside Microchannels**
TABAK A. F., YEŞİLYURT S.
ASME 5th International Conference on Nanochannels, Microchannels, and Minichannels (ICNMM), Puebla, Meksika, 18 - 20 Haziran 2007
- XXX. **Numerical simulations and analysis of a micropump actuated by traveling plane waves**
TABAK A. F., Yeşilyurt S.
Microfluidics, BioMEMS, and Medical Microsystems V, San Jose, CA, Amerika Birleşik Devletleri, 22 - 24 Ocak 2007, cilt.6465
- XXXI. **Simulation-based analysis of 3D flow inside a micropump with passive valves**
TABAK A. F., Solak A., Erdem E., Akcan C., Yesilyurt S.
ASME 2007 International Mechanical Engineering Congress and Exposition, IMECE 2007, Washington, Amerika

Birleşik Devletleri, 11 - 15 Kasım 2007, cilt.11, ss.849-856

XXXII. Numerical analysis of a planar wave propagation based micropropulsion system

TABAK A. F., Yeşilyurt S.

ASME 2007 International Mechanical Engineering Congress and Exposition, IMECE 2007, Washington, Amerika

Birleşik Devletleri, 11 - 15 Kasım 2007, cilt.11, ss.781-790

Bilimsel Hakemlikler

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Mayıs 2024

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Mayıs 2024

IEEE TRANSACTIONS ON ROBOTICS, SCI-E Kapsamındaki Dergi, Mayıs 2024

ADVANCED INTELLIGENT SYSTEMS, SCI-E Kapsamındaki Dergi, Nisan 2024

FRONTIERS IN ROBOTICS AND AI, SCI-E Kapsamındaki Dergi, Nisan 2024

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Nisan 2024

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Mart 2024

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Mart 2024

Frontiers in Energy Research, SCI-E Kapsamındaki Dergi, Mart 2024

FRONTIERS IN SENSORS, SCI-E Kapsamındaki Dergi, Şubat 2024

IEEE Robotics and Automation Letters, SCI-E Kapsamındaki Dergi, Şubat 2024

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Şubat 2024

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Ocak 2024

IEEE Robotics and Automation Letters, SCI-E Kapsamındaki Dergi, Ocak 2024

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Aralık 2023

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Aralık 2023

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Aralık 2023

IEEE Robotics and Automation Letters, SCI-E Kapsamındaki Dergi, Kasım 2023

FRONTIERS IN ROBOTICS AND AI, SCI-E Kapsamındaki Dergi, Kasım 2023

IEEE Robotics and Automation Letters, SCI-E Kapsamındaki Dergi, Kasım 2023

IEEE/ASME TRANSACTIONS ON MECHATRONICS, SCI-E Kapsamındaki Dergi, Ekim 2023

FRONTIERS IN ROBOTICS AND AI, SCI-E Kapsamındaki Dergi, Ekim 2023

Metrikler

Yayın: 59

Atf (WoS): 1188

Atf (Scopus): 1352

H-İndeks (WoS): 13

H-İndeks (Scopus): 16

Akademi Dışı Deneyim

Ford Otosan