ÖZGEÇMİŞ

1. Adı Soyadı : **Ahmet Fatih Tabak**

İletişim Bilgileri
Adres : **Mühendislik ve Doğa Bilimleri Fakültesi, Çırağan Caddesi Osmanpaşa Mektebi Sokak No: 4 – 6 34353 Beşiktaş, İSTANBUL / TÜRKİYE**

Telefon : **0212 381 5648**
Mail : **ahmetfatih.tabak @ eng.bau.edu.tr - ahmetfatih.tabak @ mpg.alumni.de**

2. Doğum Tarihi : **19.03.1982**

3. Unvanı : **Dr.**

4. Öğrenim Durumu : **PhD + Post-Doc**

Derece	Alan	Üniversite	Yıl
Lisans	Mekatronik Muhendisligi	Sabanci Universitesi	2005
Yüksek Lisans	Elektronik Muhendisligi ve Bilgisayar Bilimleri	Sabanci Universitesi	2007
Doktora	Mekatronik Muhendisligi	Sabanci Universitesi	2012

5. Akademik Unvanlar

Yardımcı Doçent Doktor – T.C. İstanbul Ticaret Üniversitesi, İstanbul – 12.2012-09.2014
Post-Doc Researcher – Max Planck Institute for Intelligent Systems, Stuttgart – 09.2014-09.2017
Yardımcı Doçent Doktor – T.C. Okan Üniversitesi, İstanbul – 02.2018-06.2018
Dr. Öğretim Üyesi – Bahçeşehir Üniversitesi – 09.2018 - Halen

6. Yönetilen Yüksek Lisans ve Doktora Tezleri

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6.1. Yüksek Lisans Tezleri

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6.2. Doktora Tezleri

-

7. Yayınlar

7.1. Uluslar arası hakemli dergilerde yayınlanan makaleler

Y. Alapan, O. Yasa, O. Schauer, J. Giltinan, **A.F. Tabak**, V. Sourjik, M. Sitti, "Soft Erythrocyte-based bacterial microswimmers for cargo delivery," **Science Robotics**, vol. 3, iss. 17, aa4423-1 – aa4423-10 , April, 2018. **DOI:** 10.1126/scirobotics.aar4423

S.M. Khalil, **A.F. Tabak**, Y. Hamed, M. Tawakol, A. Klingner, N.A. El Gohary, B. Mizaikoff, M. Sitti, "Independent actuation of two-tailed microrobots," **IEEE Robotics and Automation Letters**, vol.

3, iss. 3, pp. 1703 – 1710, July, 2018. **DOI**: 10.1109/LRA.2018.2801793

A.F. Tabak, "Hydrodynamic impedance of bacteria and bacteria-inspired micro-swimmers: A new strategy to predict power consumption of swimming micro-robots for real-time applications," **Advanced Theory and Simulations**, vol. 1, iss. 4, 1700013-1 – 1700013-10, April, 2018. **DOI**: 10.1002/adts.201700013

I.S.M. Khalil, D. Mahdy, A. El-Sharkawy, R. Moustafa, **A.F. Tabak**, M. Mitwally, S.H. El Feshawy, N. Hamdi, A. Klingner, A. Mohamed, M. Sitti, "Mechanical rubbing of blood clots using helical robots under ultrasound guidance," **IEEE Robotics and Automation Letters**, vol. 3, iss. 2, pp. 1112 – 1119, April, 2018. **DOI**: 10.1109/LRA.2018.2792156

I.S.M. Khalil, **A.F. Tabak**, Y. Hamed, M. Elwi, M. Tawakol, M. Sitti, "Swimming back and forth using planar flagellar propulsion at low Reynolds numbers," **Advanced Science**, vol. 5, iss. 2, 1700461-1 – 1700461-9, February, 2018. **DOI**: 10.1002/advs.201700461

I.S.M. Khalil, **A.F. Tabak**, K. Sadek, D. Mahdy, N. Hamdi, M. Sitti, "Rubbing against blood clots using helical robots: Modeling and *in vitro* experimental validation," **IEEE Robotics and Automation Letters**, vol. 2, iss. 2, pp. 927–934, April, 2017. **DOI**: 10.1109/LRA.2017.2654546

I.S.M. Khalil, **A.F. Tabak**, A. Klingner, M. Sitti, "Magnetic propulsion of robotic sperms at low-Reynolds number," **Applied Physics Letters**, vol. 109, no. 3, pp. 033701-1 – 033701-5, July, 2016. **DOI**: 10.1063/1.4958737

A.F. Tabak, S. Yesilyurt, "Computationally-validated surrogate models for optimal geometric design of bio-inspired swimming robots: Helical swimmers," **Computers and Fluids**, vol. 99, pp. 190–198, July, 2014. **DOI**: 10.1016/j.compfluid.2014.04.033

A.F. Tabak, S. Yesilyurt, "Improved kinematic models for two-link helical micro/nanoswimmers," **IEEE Transactions on Robotics**, Special Issue on Nanorobotics, vol. 30, no. 1, pp. 14–25, February, 2014. **DOI**: 10.1109/TRO.2013.2281551

A.F. Tabak, S. Yesilyurt, "Simulation-based analysis of flow due to traveling-plane-wave deformations on elastic thin-film actuators in micropumps," **Microfluidics and Nanofluidics**, vol. 4, no. 6, pp. 489–500, June, 2008. **DOI**: 10.1007/s10404-007-0207-y

7.2. Uluslar arası bilimsel toplantılarda sunulan ve bildiri kitabında (Proceeding) basılan bildiriler.

A. Ezz, A. Klingner, **A.F. Tabak**, I.S.M. Khalil, "Manipulation of non-magnetic microbeads using soft microrobotic sperm," International Conference on Manipulation, Automation and Robotics at Small Scales (**MARSS2018**), Special Session on Swimming Microrobots, Nagoya, Japan, July, 2018. (Presented)

I.S.M. Khalil, **A.F. Tabak**, M.A. Sief, A. Klingner, B. Adel, M. Sitti, "Swimming in low Reynolds numbers using planar and helical flagellar waves," Proceedings of the 2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS2017**), Vancouver, BC, Canada, September, 2017, pp. 1907-1912. **DOI**: 10.1109/IROS.2017.8206009

I.S.M. Khalil, A. Alfar, **A.F. Tabak**, A. Klingner, S. Stramigioli, M. Sitti, "Positioning of drug carriers using permanent magnet-based robotic system in three-dimensional space," Proceedings of the IEEE International Conference on Advanced Intelligent Mechatronics (**AIM2017**), Munich, Germany, July, 2017, pp. 117-1122. **DOI**: 10.1109/AIM.2017.8014168

I.S.M. Khalil, **A.F. Tabak**, T. Hageman, M. Ewis, M. Pichel, M.E. Mitwally, N.S. El-Din, L. Abelmann, M. Sitti, "Near-surface effects on the controlled motion of magnetotactic bacteria," Proceedings of The 2017 IEEE International Conference on Robotics and Automation (**ICRA2017**), Singapore, May-June, 2017, pp. 5776-5982. **DOI**: 10.1109/ICRA.2017.7989705

I.S.M. Khalil, **A.F. Tabak**, A. Hosney, A. Klingner, M. Shalaby, R.M. Abdel-Kader, M. Serry, M. Sitti, "Targeting of cell mockups using sperm-shaped microrobots *in vitro*," Proceedings of The 6th IEEE RAS & EMBS International Conference on Biomedical Robotics and Biomechatronics (**BIOROB2016**), Singapore, June, 2016, pp. 495-501. **DOI**: 10.1109/BIOROB.2016.7523675

I.S.M. Khalil, **A.F. Tabak**, A. Hosney, A. Mohamed, A. Klingner, M. Ghoneima, M. Sitti, "Sperm-

shaped magnetic microrobots: Fabrication using electrospinning, modeling, and characterization," Proceedings of The 2016 IEEE International Conference on Robotics and Automation (**ICRA2016**), Stockholm, Sweden, May, 2016, pp. 1939-1944. **DOI**: 10.1109/ICRA.2016.7487340

A.G. Erman, **A.F. Tabak**, "Resistive force theory based modeling and simulation of surface contact for swimming helical micro robots with channel flow," Proceedings of The 2014 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (**AIM2014**), Besançon, France, July, 2014, pp. 390-395. **DOI**: 10.1109/AIM.2014.6878110

A.F. Tabak, S. Yesilyurt, "In-channel experiments on vertical swimming with bacteria-like robots," Proceedings of The 2013 IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS2013**), Tokyo, Japan, November, 2013, pp. 4596-4601. **DOI**: 10.1109/IROS.2013.6697017

A.F. Tabak, S. Yesilyurt, "Experimental validation of a CFD-based resistive force coefficient set for rotating helical tails in cylindrical channels," Proceedings of The 7th Subrata Chakrabarti International Conference on Fluid Structure Interaction (**FSI2013**), Gran Canaria, Spain, April, 2013. DOI: 10.2495/FSI130181 & ISBN: 978-1-84564-700-1

F.Z. Temel, O. Erin, **A.F. Tabak**, S. Yesilyurt, "Bio-inspired micro robots swimming in channels," Proceedings of The 13th Mechatronics Forum International Conference: Minisymposia on Human Adaptive and Friendly Mechatronics (**MECHATRONICS2012**), Linz, Austria, September, 2012. **ISBN**: 978-3-99033-046-3

A.F. Tabak, S. Yesilyurt, "Experiments on in-channel swimming of an untethered biomimetic robot with different helical tails," Proceedings of The 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (**BIOROB2012**), Rome, Italy, June, 2012, pp. 556-561. **DOI**: 10.1109/BioRob.2012.6290834

A.F. Tabak, S. Yesilyurt, "Experiment-based kinematic validation of numeric modeling and simulated control of an untethered biomimetic microrobot in channel," Proceedings of The 12th IEEE International Workshop on Advanced Motion Control (**AMC2012**), Sarajevo, Bosnia and Herzegovina, March, 2012, pp. 1-6. **DOI**: 10.1109/AMC.2012.6197094

A.F. Tabak, F.Z. Temel, S. Yesilyurt, "Comparison on experimental and numerical results for helical swimmers inside channels," Proceedings of The IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS2011**), San Francisco, California, USA, September, 2011, pp. 463-468. **DOI**: 10.1109/IROS.2011.6094620

A.F. Tabak, S. Yesilyurt, "Validated reduced order models for simulating trajectories of bio-inspired artificial micro-swimmers," Proceedings of The ASME 3rd Joint US-European Fluids Engineering Summer Meeting and 8th International Conference on Nanochannels, Microchannels and Minichannels (**FEDSM2010-ICNMM2010**), Montreal, Canada, August, 2010. **DOI**: 10.1115/FEDSM-ICNMM2010-30857

A.F. Tabak, A. Solak, E.Y. Erdem, C. Akcan, S. Yesilyurt, "Simulation-based analysis of 3D flow inside a micropump with passive valves," Proceedings of The ASME International Mechanical Engineering Congress and Exhibition (**IMECE2007**), Seattle, USA, November, 2007. **DOI**: 10.1115/IMECE2007-42037

A.F. Tabak, S. Yesilyurt, "Numerical analysis of a planar wave propagation based micropropulsion system," Proceedings of The ASME International Mechanical Engineering Congress and Exhibition (**IMECE2007**), Seattle, USA, November, 2007. DOI: 10.1115/IMECE2007-41604

A.F. Tabak, S. Yesilyurt, "Numerical analysis of the 3D flow induced by propagation of plane-wave deformations on thin membranes inside microchannels," Proceedings of The ASME 5th International Conference on Nanochannels, Microchannels & Minichannels, (**ICNMM2007**), Puebla, Mexico, June, 2007. **DOI**: 10.1115/ICNMM2007-30135

A.F. Tabak, S. Yesilyurt, "Numerical simulations and analysis of a micropump actuated by traveling plane waves," Proceedings of The 2007 SPIE-Photonics West, (**MOEMS-MEMS2007**), San Jose, California, USA, January, 2007. **DOI**: 10.1117/12.702320

A.F. Tabak, S. Yesilyurt, "Numerical simulations of a traveling plane-wave actuator for microfluidic applications," Proceedings of The COMSOL Users Conference, Boston, MA, USA, October, 2006. **ISBN**: 0-9766792-2-1

7.3. Yazılan Uluslar arası kitaplar veya kitaplarda bölümler.

A.F. Tabak, Ch 12: *Bio-inspired and bio-mimetic micro-robotics for therapeutic applications*, in: Handbook of Biomechatronics, J. Segil, C. Rowley, Ed., Elsevier, 2018. (in pre-production)

A.F. Tabak, S. Yesilyurt, *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*, LAP Lambert Academic Publishing GmbH & Co. KG., Sep., 2016. ISBN: 978-3-659-94808-4

A.F. Tabak, S. Yesilyurt, *Numerical & experiment-based modeling for bio-inspired microswimmers: Modeling hydrodynamic interactions acting on individual bio-inspired microswimmer*, LAP Lambert Academic Publishing GmbH & Co. KG., May, 2016. ISBN: 978-3-659-88616-4.

7.4. Ulusal hakemli dergilerde yayınlanan makaleler

-

7.5. Ulusal bilimsel toplantılarda sunulan bildiri kitabında basılan bildiriler

A.G. Erman, **A.F. Tabak**, "Dar kanallar içerisinde hareket eden manyetik mikro yüzücülerin direnç-kuvveti-teorisi tabanlı modellemesi," Proceedings of The 15th National Conference on Automatic Control (TOK2014), Kocaeli, Turkey, September, 2014.

A.F. Tabak, A. Bozkurt, S. Yesilyurt, "Yürüyen düzlem dalgaların piezoseramikler ile implementasyonu," Proceedings of The 14th National Conference on Automatic Control (TOK2013), Malatya, Turkey, September, 2013.

7.6 Diğer Yayınlar

A. F. Tabak, "Hydrodynamic impedance correction for reduced-order modeling and real-time control of spermatozoa-like soft micro-robots for medicine," **arXiv:**1808.08827v2 (https://arxiv.org/abs/1808.08827), 2018.

H. Ceylan, I.C. Yasa, O. Yasa, **A.F. Tabak**, J. Giltinan, M. Sitti, "3D-printed biodegradable microswimmers for drug delivery and targeted cell labeling," BioRxiv 379024 [Preprint], 2018. **DOI**: 10.1101/379024

G.J. Amador, **A.F. Tabak**, Z. Ren, Y. Alapan, O. Yasa, M. Sitti, "Thermocapillary-driven fluid flow within microchannels," **arXiv**:1802.00475v1 (https://arxiv.org/abs/1802.00475), 2018.

A.F. Tabak, S. Yesilyurt, "Hydrodynamic surrogate models for bio-inspired micro-swimming robots," **arXiv**:1311.3429v2 (https://arxiv.org/abs/1311.3429), 2013.

F. G. Ergin, **A.F. Tabak**, W. Wang, M. Sitti, "Time-resolved measurements of the free surface motion due to spinning micro-rafts using stereo microPIV," Proceedings of the 12th International Symposium on Particle Image Velocimetry (ISPIV), Pusan, Korea, June, 2017. (Available at WWW: https://www.dantecdynamics.com/miscellaneous-category/time-resolved-measurements-of-the-free-surface-motion-due-to-spinning-micro-rafts-using-stereo-micropiv)

A.F. Tabak, G. Amador, M. Sitti, "Modeling 6-dof rigid-body motion of a thermocapillary microswimmer," Proceedings of COMSOL Conference 2016 Munich, Germany, October, 2016. (Available at WWW: https://www.comsol.com/2016-user-presentations/multiphysics)

M. Amjadi, B. Mostaghaci, **A.F. Tabak**, M. Sitti, "Bacteriabot factory: A high-throughput system for controllable fabrication of bacteriabots," Max Planck-ETH Center for Learning Systems Workshop on Biomedical Micro/Nanosystems Engineering, Ringberg Castle, Germany, September, 2016.

(Poster)

G.J. Amador, W. Hu, **A.F. Tabak**, M. Sitti, "Submerged thermocapillary microswimmer," Proceedings of the 1st International Conference on Multiscale Applications of Surface Tension, Brussels, Belgium, September, 2016.

A. F. Tabak, I.S.M. Khalil, M. Sitti, "Computational modeling of magnetic microswimmers with flexible body," The 2016 SAB Meeting for Max Planck Institute for Intelligent Systems, Stuttgart, Germany, April, 2016. (Poster)

B.-W. Park, B. Mostaghaci, O. Yasa, **A.F. Tabak**, A.V. Singh, Z. Hosseini-Doust, S. Zakharchenko, H. Ceylan, I.C. Garip-Yasa, Y. Yakupoglu, A. Akay, J. Zhang, M. Sitti, "The tactic behavior of bioinspired and synthetic microswimmers," In: Microswimmiers – From Single Particle Motion to Collective Behavior, Microswimmers Summer School 2015, Jülich, Germany, September, 2015. (Poster)

A.F. Tabak, S. Yesilyurt, "Investigation on the propulsion methods for swimming autonomous micro robots in channels," In: The Boğaziçi University Master Forum (MASFOR2012), Istanbul, Turkey, June, 2012. (Poster)

A.F. Tabak, F.Z. Temel, S. Yesilyurt, "Magnetic E. Coli in channel: theory vs. experiment," In: The 7th National Nanoscience and Technology Conference (NanoTR VII), Istanbul, Turkey, 27 June – 01 July, 2011. (Poster)

8.Projeler

- *Fabrication of Optical-Vortex-Driven Micro-Motors*, Grassroots Initiative Program, Max Planck Institute for Intelligent Systems, Stuttgart, Germany, 10.2015 – 05.2017.
  PIs: Dr. Ahmet Fatih Tabak (Abt. Sitti) & Dr. Kahraman Keskinbora (Abt. Schütz) Budget: 20.000 EUR
- *Study of Upstream Swimming Performance of Bacteria-like Robots*, Committee of Publication, Research, and Project Coordination (YAPKO), Istanbul Commerce University, Istanbul, Turkey, 09.2013 – 09.2014.
  PI: Dr. Ahmet Fatih Tabak. Budget: 30.000 TL
- *Modeling and characterization of helices moving in thin channels*, Turkish Scientific and Technological Research Council of Turkey (TUBITAK), Grant Number 111M376, Fall/Spring 2012.
  PI: Dr. Serhat Yesilyurt
- *Design and demonstration of the traveling-wave actuator for viscous propulsion of micro-swimmers*, Sabanci University Internal Grant Program, Contract Number IACF06-00418, Fall 2006 – Spring 2008.
  PIs: Dr. Serhat Yesilyurt, Dr. Melih Papila, Dr. Ayhan Bozkurt

9.İdari Görevler

Fen Bilimleri Enstitüsü Yönetim Kurulu Üyeliği – T.C. İstanbul Ticaret Üniversitesi – 12.2012-09.2014

10.Bilimsel Kuruluşlara Üyelikleri

Institute of Electrical and Electronics Engineers, Member
IEEE Young Professionals, Member
American Society of Mechanical Engineers, Member
Robotics and Automation Society, Member

11.Ödüller

2018	IEEE ICRA2018 'Best Paper Award Finalist', Brisbane, Australia.
2016	FameLab Germany: Karlsruhe 2016, 1st Place, British Council, Karlsruhe, Germany.
2015	Thesis in Three, Post-Doc Category, 2nd Place, MPI for IS, Stuttgart, Germany.
2015 – 2017	Grassroots Initiative Grant, MPI for Intelligent Systems, Stuttgart, Germany.

2014 – 2017	Max-Planck-Gesellschaft Postdoctoral Fellowship, Stuttgart, Germany.
2013	Subrata Chakrabarti Medal, Wessex Institute of Technology, Southampton, UK.
2013 – 2014	YAPKO Project Grant, Istanbul Commerce University, Istanbul, Turkey.
2008	Research Scientist, Educator. Marquis Who's Who, NJ, US.
2007	Dr. Gürsel Sönmez Research Award, Sabanci University, Istanbul, Turkey.
2007	Successful Teaching Assistant Certificate, Sabanci University, Istanbul, Turkey.
2007 – 2011	Ph.D. Fellowship, Sabanci University, Istanbul, Turkey.
2005 – 2007	M.Sc. Fellowship, Sabanci University, Istanbul, Turkey.
2000 – 2005	Recognition Scholarship, Sabanci University, Istanbul, Turkey.
2000	Ranked within the top 1% in Turkey's national university entrance exam (OSS)
1999	Honorary Board Student President, Lüleburgaz Anatolian H. S., Kırklareli, Turkey.

12.Son iki yılda verdiği lisans ve lisansüstü düzeyindeki dersler

Akademik Yıl	Dönem	Dersin Adı	Haftalık Saati		Öğrenci Sayısı
			Teorik	Uygulama	
2017/2018	Bahar	Introduction to Robotics	3	0	7
2017/2018	Bahar	Introduction to Thermal Systems Engineering	3	0	9
2017/2018	Yaz	Fluid Mechanics	3	0	8

*** İşaretli dersler, yüksek lisans dersleridir.**