

## Prof. SİNAN GÜREL

### Personal Information

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### International Researcher IDs

ScholarID: utjqDBAAAAAJ

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Publons / Web Of Science ResearcherID: A-3517-2019

ScopusID: 15048066200

Yoksis Researcher ID: 165113

### Education Information

Doctorate, Ihsan Dogramaci Bilkent University, Institute Of Engineering And Natural Sciences, Endüstri Mühendisliği (Dr), Turkey 2003 - 2008

Postgraduate, Ihsan Dogramaci Bilkent University, Institute Of Engineering And Natural Sciences, Endüstri Mühendisliği (YI) (Tezli), Turkey 2001 - 2003

Undergraduate, Ihsan Dogramaci Bilkent University, Faculty Of Engineering, Department Of Industrial Engineering, Turkey 1995 - 1999

### Research Areas

Industrial Engineering , Optimization Theory and Methods, Integer and Mixed Integer Programming, Production Planning and Control, Scheduling, Engineering and Technology

### Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2018 - Continues

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2014 - 2018

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Industrial Engineering, 2009 - 2014

### Academic and Administrative Experience

Assistant Director of the Institute, Middle East Technical University, Graduate School of Natural and Applied Sciences, 2014 - 2018

## Advising Theses

- GÜREL S., Supplier selection for assembly components under lead time uncertainty, Postgraduate, Z.KÜREKÇİ(Student), 2022
- GÜREL S., Energy conscious machine and robot speed decisions in two machine robotic cell scheduling, Postgraduate, B.NECİBE(Student), 2021
- GÜREL S., Energy efficient scheduling in flow-shop and parallel machine robotic cells, Postgraduate, Ç.AYDOĞAN(Student), 2021
- GÜREL S., Exact decomposition algorithms for nonlinear location and hub location problems, Doctorate, E.GÜNDÖĞDU(Student), 2018
- GÜREL S., Energy conscious scheduling in a two-machine robotic cell, Postgraduate, V.EGHBAL(Student), 2017
- GÜREL S., Public R&D project portfolio selection problems under expenditure uncertainty and sectoral budget balancing, Doctorate, M.ÇAĞLAR(Student), 2016
- GÜREL S., Chance constrained schedule design for heterogeneous fleet in liner shipping service, Postgraduate, A.SHADMAND(Student), 2015
- GÜREL S., Airline disruption management, Doctorate, U.ARIKAN(Student), 2014
- GÜREL S., An integrated approach for robust airline scheduling aircraft fleet and routing with cruise speed control, Postgraduate, H.GÜRKAN(Student), 2014
- GÜREL S., A Mixed integer second order cone programming reformulation for a congested location and capacity allocation problem on a supply chain network, Postgraduate, M.Salimian(Student), 2013
- SÜRAL H., GÜREL S., The Air cargo scheduling problem with heterogenous fleet, Postgraduate, Y.Durdak(Student), 2013
- GÜREL S., Local search heuristics for pollution-routing problem with multiple vehicle types and deadlines, Postgraduate, O.CAN(Student), 2013
- GÜREL S., Fleet type assignment and robust airline scheduling with chance constraints under environmental emission considerations, Postgraduate, Ö.ŞAFAK(Student), 2013
- GÜREL S., Robust airline scheduling with controllable cruise times and chance constraints, Postgraduate, A.SERASU(Student), 2012
- GÜREL S., SÜRAL H., Heat exchanger network synthesis with detailed design: Reformulation as a shortest path problem by temperature discretization, Postgraduate, İ.KİRKİZOĞLU(Student), 2012
- GÜREL S., A rescheduling problem with controllable processing times: Trade-off between number of disrupted jobs and rescheduling costs, Postgraduate, D.CİNCİOĞLU(Student), 2011
- GÜREL S., Inter- auction transport optimization in floriculture industry, Postgraduate, Z.ÖZLEM(Student), 2011

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Energy efficient scheduling of a two machine robotic cell producing multiple part types**  
AYDOĞAN Ç., GÜREL S.  
Flexible Services and Manufacturing Journal, 2024 (SCI-Expanded)
- II. **Scheduling a dual gripper material handling robot with energy considerations**  
Gürel S., Gultekin H., Emiroglu N.  
JOURNAL OF MANUFACTURING SYSTEMS, vol.67, pp.265-280, 2023 (SCI-Expanded)
- III. **Public R &D project portfolio selection under expenditure uncertainty**  
Çağlar M., GÜREL S.  
Annals of Operations Research, 2023 (SCI-Expanded)
- IV. **Bicriteria scheduling of a material handling robot in an m-machine cell to minimize the energy consumption of the robot and the cycle time**  
Gultekin H., GÜREL S., Taspınar R.  
Robotics and Computer-Integrated Manufacturing, vol.72, 2021 (SCI-Expanded)
- V. **A heterogeneous fleet liner ship scheduling problem with port time uncertainty**  
GÜREL S., Shadmand A.

- CENTRAL EUROPEAN JOURNAL OF OPERATIONS RESEARCH, vol.27, no.4, pp.1153-1175, 2019 (SCI-Expanded)
- VI. **Energy conscious scheduling of a material handling robot in a manufacturing cell**  
GÜREL S., Gultekin H., Akhlaghi V. E.  
ROBOTICS AND COMPUTER-INTEGRATED MANUFACTURING, vol.58, pp.97-108, 2019 (SCI-Expanded)
- VII. **Impact assessment based sectoral balancing in public R&D project portfolio selection**  
Caglar M., GÜREL S.  
SOCIO-ECONOMIC PLANNING SCIENCES, vol.66, pp.68-81, 2019 (SCI-Expanded)
- VIII. **Flight Network-Based Approach for Integrated Airline Recovery with Cruise Speed Control**  
ARIKAN U., GÜREL S., Akturk M. S.  
TRANSPORTATION SCIENCE, vol.51, no.4, pp.1259-1287, 2017 (SCI-Expanded)
- IX. **Integrated aircraft-path assignment and robust schedule design with cruise speed control**  
Safak O., GÜREL S., Akturk M. S.  
COMPUTERS & OPERATIONS RESEARCH, vol.84, pp.127-145, 2017 (SCI-Expanded)
- X. **Public R&D project portfolio selection problem with cancellations**  
ÇAĞLAR M., GÜREL S.  
OR SPECTRUM, vol.39, no.3, pp.659-687, 2017 (SCI-Expanded)
- XI. **Using cost change estimates in a local search heuristic for the pollution routing problem**  
SAKA O. C., GÜREL S., Van Woensel T.  
OR SPECTRUM, vol.39, no.2, pp.557-587, 2017 (SCI-Expanded)
- XII. **An integrated approach for airline scheduling, aircraft fleetling and routing with cruise speed control**  
Gurkan H., GÜREL S., Akturk M. S.  
TRANSPORTATION RESEARCH PART C-EMERGING TECHNOLOGIES, vol.68, pp.38-57, 2016 (SCI-Expanded)
- XIII. **Integrated aircraft and passenger recovery with cruise time controllability**  
Arikan U., GÜREL S., Akturk M. S.  
ANNALS OF OPERATIONS RESEARCH, vol.236, no.2, pp.295-317, 2016 (SCI-Expanded)
- XIV. **The congested multicommodity network design problem**  
Paraskevopoulos D. C., Guerel S., Bektas T.  
TRANSPORTATION RESEARCH PART E-LOGISTICS AND TRANSPORTATION REVIEW, vol.85, pp.166-187, 2016 (SCI-Expanded)
- XV. **Rescheduling with controllable processing times for number of disrupted jobs and manufacturing cost objectives**  
GÜREL S., Cincioglu D.  
INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.53, no.9, pp.2751-2770, 2015 (SCI-Expanded)
- XVI. **Robust Airline Scheduling with Controllable Cruise Times and Chance Constraints**  
Duran A. S., GÜREL S., Akturk M. S.  
IIE TRANSACTIONS, vol.47, no.1, pp.64-83, 2015 (SCI-Expanded)
- XVII. **Aircraft Rescheduling with Cruise Speed Control**  
Akturk M. S., ATAMTÜRK A., GÜREL S.  
OPERATIONS RESEARCH, vol.62, no.4, pp.829-845, 2014 (SCI-Expanded)
- XVIII. **Efficiency analysis of load balancing games with and without activation costs**  
Chen B., Gurel S.  
JOURNAL OF SCHEDULING, vol.15, no.2, pp.157-164, 2012 (SCI-Expanded)
- XIX. **A conic quadratic formulation for a class of convex congestion functions in network flow problems**  
Gurel S.  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.211, no.2, pp.252-262, 2011 (SCI-Expanded)
- XX. **An anticipative scheduling approach with controllable processing times**  
Gurel S., Korpeoglu E., Akturk M. S.  
COMPUTERS & OPERATIONS RESEARCH, vol.37, no.6, pp.1002-1013, 2010 (SCI-Expanded)
- XXI. **Parallel machine match-up scheduling with manufacturing cost considerations**  
Akturk M. S., Atamturk A., Gurel S.  
JOURNAL OF SCHEDULING, vol.13, no.1, pp.95-110, 2010 (SCI-Expanded)

- XXII. **A strong conic quadratic reformulation for machine-job assignment with controllable processing times**  
Akturk M. S., Atamturk A., Gurel S.  
OPERATIONS RESEARCH LETTERS, vol.37, no.3, pp.187-191, 2009 (SCI-Expanded)
- XXIII. **Scheduling preventive maintenance on a single CNC machine**  
Gurel S., Akturk M. S.  
INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.46, no.24, pp.6797-6821, 2008 (SCI-Expanded)
- XXIV. **Optimal allocation and processing time decisions on non-identical parallel CNC machines: epsilon-constraint approach**  
Gurel S., Akturk M. S.  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.183, no.2, pp.591-607, 2007 (SCI-Expanded)
- XXV. **Scheduling parallel CNC machines with time/cost trade-off considerations**  
Gurel S., Akturk M. S.  
COMPUTERS & OPERATIONS RESEARCH, vol.34, no.9, pp.2774-2789, 2007 (SCI-Expanded)
- XXVI. **Considering manufacturing cost and scheduling performance on a CNC turning machine**  
Gurel S., Akturk M. S.  
EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, vol.177, no.1, pp.325-343, 2007 (SCI-Expanded)
- XXVII. **Machining conditions-based preventive maintenance**  
Akturk M. S., Gurel S.  
INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH, vol.45, no.8, pp.1725-1743, 2007 (SCI-Expanded)

### **Refereed Congress / Symposium Publications in Proceedings**

- I. **Robotic Cell Scheduling Considering Energy Consumption of Robot**  
GÜLTEKİN H., GÜREL S., AKHLAGHI v. e.  
MISTA 2017 Multidisciplinary International Scheduling Conference, Kuala-Lumpur, Malaysia, 5 - 08 December 2017
- II. **Impact Assessment Based Sectoral Balancing in Public RD Project Portfolio Selection Problem**  
GÜREL S., Musa Ç.  
OR2017 - INTERNATIONAL CONFERENCE ON OPERATIONS RESEARCH, Berlin, Germany, 6 - 08 September 2017
- III. **Integer L-shaped algorithm and MISOCP for nonlinear network design problem**  
GÜNDOĞDU E., GÜREL S.  
21st Conference of the International Federation of Operational Research Societies, Montreal, Canada, 17 - 21 July 2017
- IV. **Kamu Ar-Ge Proje Portföy Seçiminde Sektörlere Etki Değerlendirme Temelli Dengeli Bütçe Dağıtımı**  
GÜREL S., MUSA Ç.  
37. YÖNEYLEM ARAŞTIRMASI VE ENDÜSTRİ MÜHENDİSLİĞİ ULUSAL KONGRESİ, İstanbul, Turkey, 5 - 07 July 2017
- V. **Energy Aware Scheduling of the Material Handling Robot in M-Machine Robotic Cells**  
GÜLTEKİN H., GÜREL S., TAŞPINAR R.  
8th International Advanced Technologies Symposium (IATS) 2017, Elazığ, Turkey, 19 October - 22 January 2017
- VI. **Energy Conscious Robot Scheduling in Robotic Cell Manufacturing**  
akhlaghi v. e., GÜLTEKİN H., GÜREL S.  
Informs Annual Meeting Nashville 2016, 13 - 16 November 2016
- VII. **A chance constrained approach for heterogeneous fleet scheduling in liner shipping service**  
GÜREL S., Shadmand A.  
OR2016 Annual International Conference of the German Operations Research Society, 30 August - 02 September 2016
- VIII. **Public R D project selection problem with cancellations**  
GÜREL S., Çağlar M.  
OR2015, Viyana, Austria, 1 - 04 September 2015
- IX. **Second order conic reformulation of a wireless network design problem**

GÜNDOĞDU E., GÜREL S.

EURO 2015, 27th European Conference on Operational Research, Glasgow, United Kingdom, 12 - 15 July 2015

X. **A benders decomposition algorithm for quadratic network design problem**

GÜNDOĞDU E., GÜREL S.

EURO 2018, 29th European Conference on Operational Research, 08 July 2018 - 11 July 2011

## Supported Projects

SÜRAL H., İYİGÜN C., GÜREL S., Project Supported by Higher Education Institutions, Şehir Lojistiği için Lisans Araştırmaları, 2014 - 2015

GÜREL S., Project Supported by Higher Education Institutions, Havayolu Taşımacılığında Çizelge Aksaklıkları Yönetimi, 2011 - 2011

## Metrics

Publication: 37

Citation (WoS): 518

Citation (Scopus): 621

H-Index (WoS): 13

H-Index (Scopus): 16

## Non Academic Experience

METU

The University of Warwick

Boğaziçi Yazılım A.Ş.