

## Prof. Mustafa Bakkal

### Personal Information

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### Education Information

Doctorate, North Carolina State University, Makina Mühendisliği, United States Of America 2001 - 2004  
Postgraduate, California Institute Of Technology, Uygulamalı Mekanik, United States Of America 2000 - 2001  
Postgraduate, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, Turkey 1997 - 1999  
Undergraduate, İstanbul Teknik Üniversitesi, Makine Fakültesi, Makine Mühendisliği Bölümü, Turkey 1993 - 1997

### Foreign Languages

English

### Dissertations

Doctorate, Machining of Bulk Metallic Glasses, North Carolina State University, Makina Ve Uçak Mühendisliği, Makina Mühendisliği, 2004  
Postgraduate, İyon Nitrürlemenin Ostemperlenmiş AISI 8660 Çeliğinin Mekanik Özelliklerine Etkisi, İstanbul Teknik Üniversitesi, Makina Mühendisliği, Makina Mühendisliği, 1999

### Research Areas

Technical Sciences, Mechanical Engineering, Construction and Manufacturing, Machine Design, Material, Machining Methods, Metallurgical and Materials Engineering, Material science and engineering, Composites

### Academic Titles / Tasks

Professor, Istanbul Technical University, Makina, Makina Mühendisliği, 2018 - Continues  
Associate Professor, Istanbul Technical University, Makina, Makina Mühendisliği, 2011 - 2018  
Assistant Professor, Istanbul Technical University, Makina, Makina Mühendisliği, 2005 - 2011  
Research Assistant, Istanbul Technical University, Makina, Makina Mühendisliği, 1998 - 2005

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Effect of scanning strategies and laser parameters on metal-composite joining**  
Kuzu A. T. , Karaguzel U., Erbay B., Bakkal M.  
MATERIALS AND MANUFACTURING PROCESSES, 2021 (Journal Indexed in SCI)
- II. **Photostabilizers performance on the surface analysis of green composites**  
Sonmez H. E. , Bodur M. S. , Baysan A. A. , Bakkal M., Serhatlı İ. E.  
POLYMERS & POLYMER COMPOSITES, vol.29, no.1, pp.57-64, 2021 (Journal Indexed in SCI)

- III. **Experimental analysis on drilling of Al/Ti/CFRP hybrid composites**  
Kayihan M., Karaguzel U., Bakkal M.  
MATERIALS AND MANUFACTURING PROCESSES, 2020 (Journal Indexed in SCI)
- IV. **A study on the photostabilizer additives on the textile fiber reinforced polymer composites: Mechanical, thermal, and physical analysis**  
BODUR M. S. , BAKKAL M., SONMEZ H. E.  
Polymer Engineering And Science, vol.58, pp.1082-1090, 2018 (Journal Indexed in SCI)
- V. **Investigation of temperature distribution in orthogonal cutting through dual-zone contact model on the rake face**  
CAKİR E., Ozlu E., Bakkal M., Budak E.  
INTERNATIONAL JOURNAL OF ADVANCED MANUFACTURING TECHNOLOGY, vol.96, pp.81-89, 2018 (Journal Indexed in SCI)
- VI. **Dry and minimum quantity lubrication high-throughput drilling of compacted graphite iron**  
Wu W., Kuzu A., STEPHENSON D., HONG J., Bakkal M., Shih A.  
MACHINING SCIENCE AND TECHNOLOGY, vol.22, no.4, pp.652-670, 2018 (Journal Indexed in SCI)
- VII. **Water absorption behavior and kinetics of glass fiber/waste cotton fabric hybrid composites**  
Bodur M. S. , Englund K., Bakkal M.  
JOURNAL OF APPLIED POLYMER SCIENCE, vol.134, no.47, 2017 (Journal Indexed in SCI)
- VIII. **The thermal modeling of deep-hole drilling process under MQL condition**  
Kuzu A. T. , Berenji K. R. , Ekim B. C. , Bakkal M.  
JOURNAL OF MANUFACTURING PROCESSES, vol.29, pp.194-203, 2017 (Journal Indexed in SCI)
- IX. **Properties of Sound Panels Made from Recycled Footwear Treads**  
YILDIZ F., Parlar A. G. , Parlar Z., Bakkal M.  
ACTA PHYSICA POLONICA A, vol.132, no.3, pp.936-940, 2017 (Journal Indexed in SCI)
- X. **Experimental study on the glass fiber/waste cotton fabric-reinforced hybrid composites: Mechanical and rheological investigations**  
Bodur M. S. , Bakkal M., Englund K.  
JOURNAL OF COMPOSITE MATERIALS, vol.51, no.23, pp.3257-3268, 2017 (Journal Indexed in SCI)
- XI. **An Investigation for the Effect of Recycled Matrix on the Properties of Textile Waste Cotton Fiber Reinforced (T-FRP) Composites**  
Bodur M. S. , Sonmez H. E. , Bakkal M.  
POLYMER COMPOSITES, vol.38, no.7, pp.1231-1240, 2017 (Journal Indexed in SCI)
- XII. **The effect of chemical treatment methods on the outdoor performance of waste textile fiber-reinforced polymer composites**  
Bakkal M., Bodur M. S. , Sonmez H. E. , Ekim B. C.  
JOURNAL OF COMPOSITE MATERIALS, vol.51, no.14, pp.2009-2021, 2017 (Journal Indexed in SCI)
- XIII. **Modelling thermally induced deformations on tool during turn-milling**  
Karaguzel U., Bakkal M., BUDAK E.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.32, no.3, pp.865-875, 2017 (Journal Indexed in SCI)
- XIV. **The effects of different chemical treatment methods on the mechanical and thermal properties of textile fiber reinforced polymer composites**  
Bodur M. S. , Bakkal M., SONMEZ H. E.  
JOURNAL OF COMPOSITE MATERIALS, vol.50, no.27, pp.3817-3830, 2016 (Journal Indexed in SCI)
- XV. **Effects of tool axis offset in turn-milling process**  
Karaguzel U., Uysal E., Budak E., Bakkal M.  
JOURNAL OF MATERIALS PROCESSING TECHNOLOGY, vol.231, pp.239-247, 2016 (Journal Indexed in SCI)
- XVI. **The effect of cutting parameters and tool geometry on machinability of cotton-fiber reinforced polymer composites: Cutting forces, burr formation, and chip morphology**  
Kuzu A. T. , Bakkal M.  
JOURNAL OF INDUSTRIAL TEXTILES, vol.45, no.6, pp.1364-1382, 2016 (Journal Indexed in SCI)

- XVII. **Thermal and force modeling of CGI drilling**  
Kuzu A. T. , BERENJI K. R. , Bakkal M.  
INTERNATIONAL JOURNAL OF ADVANCED MANUFACTURING TECHNOLOGY, vol.82, pp.1649-1662, 2016 (Journal Indexed in SCI)
- XVIII. **An experimental study on grinding of Zr-based bulk metallic glass**  
Bakkal M., SERBEST E., KARIPCIN I., KUZU A. T. , KARAGUZEL U., Derin B.  
Advances in Manufacturing, vol.3, no.4, pp.282-291, 2015 (Journal Indexed in SCI)
- XIX. **EXPERIMENTAL INVESTIGATIONS OF MACHINABILITY IN THE TURNING OF COMPACTED GRAPHITE IRON USING MINIMUM QUANTITY LUBRICATION**  
Kuzu A. T. , BIJANZAD A., Bakkal M.  
MACHINING SCIENCE AND TECHNOLOGY, vol.19, no.4, pp.559-576, 2015 (Journal Indexed in SCI)
- XX. **Increasing tool life in machining of difficult-to-cut materials using nonconventional turning processes**  
Karaguzel U., Olgun U., Uysal E., Budak E., Bakkal M.  
INTERNATIONAL JOURNAL OF ADVANCED MANUFACTURING TECHNOLOGY, vol.77, pp.1993-2004, 2015 (Journal Indexed in SCI)
- XXI. **Analytical modeling of turn-milling process geometry, kinematics and mechanics**  
Karaguzel U., Uysal E., Budak E., Bakkal M.  
INTERNATIONAL JOURNAL OF MACHINE TOOLS & MANUFACTURE, vol.91, pp.24-33, 2015 (Journal Indexed in SCI)
- XXII. **A new approach for the development of textile waste cotton reinforced composites (T-FRP): laminated hybridization vs. coupling agents**  
Bodur M. S. , Bakkal M., SAVAS M., BERKALP Ö. B.  
JOURNAL OF POLYMER ENGINEERING, vol.34, no.7, pp.639-648, 2014 (Journal Indexed in SCI)
- XXIII. **AUTONOMOUS HOLE QUALITY DETERMINATION USING IMAGE PROCESSING TECHNIQUES**  
KUZU A. T. , Kaveh R B., Seta b., GÖKAŞAN M., Bakkal M.  
Proceedings of the IEEE International Symposium on Industrial Electronics, vol.0, pp.966-971, 2014 (Journal Indexed in SCI Expanded)
- XXIV. **Utilization of various non-woven waste forms as reinforcement in polymeric composites**  
Yalcin I., SADIKOGLU T. G. , BERKALP Ö. B. , Bakkal M.  
TEXTILE RESEARCH JOURNAL, vol.83, no.15, pp.1551-1562, 2013 (Journal Indexed in SCI)
- XXV. **The effect of reprocessing on the mechanical properties of the waste fabric reinforced composites**  
Bakkal M., BODUR M. S. , Berkalp Ö. B. , Yılmaz Ş.  
JOURNAL OF MATERIALS PROCESSING TECHNOLOGY, vol.212, no.11, pp.2541-2548, 2012 (Journal Indexed in SCI)
- XXVI. **FINITE ELEMENT MODELING OF RANDOM WASTE COTTON FIBER REINFORCED POLYETHYLENE COMPOSITES**  
GERIKALMAZ S., Yılmaz Ş., Bakkal M., Berkalp Ö. B.  
TEKSTİL VE KONFEKSİYON, vol.22, no.4, pp.293-300, 2012 (Journal Indexed in SCI)
- XXVII. **The Effects of Tool Geometry on Machinability of Textile Fabric Reinforced Termoplastic Matrix Composites**  
Bakkal M.  
Advanced Materials Research, vol.0, no.445, pp.841-846, 2012 (Journal Indexed in SCI Expanded)
- XXVIII. **Oxidation and crystallization of Zr-based bulk metallic glass due to machining**  
Bakkal M., LIU C., WATKINS T., SCATTERGOOD R., SHIH A.  
INTERMETALLICS, vol.12, no.2, pp.195-204, 2004 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. Sıcak Dövme Kalıplarına Infrared (Kızıl Ötesi) Yöntemi ile Ön Isıtma Uygulanmasına Yönelik Deneysel ve Teorik Analiz

KARAGÜZEL U., KUZU A. T. , Korap V., Çilingir H., BAKKAL M.

Makina Tasarım ve İmalat Dergisi, vol.18, no.1, pp.9-23, 2020 (Other Refereed National Journals)

**II. Young's modulus estimation techniques for the randomly oriented natural fiber reinforced composites: Finite element analysis and analytical models**

Bodur M. S. , Bakkal M.

PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSİTESİ MUHENDİSLİK BİLİMLERİ DERGİSİ, vol.25, no.4, pp.454-461, 2019 (Journal Indexed in ESCI)

**III. Improving Performance of Turn milling by Controlling Forces and Thermally Induced Tool center Point TCP Displacement**

Putz M., Ihlenfeldt S., KARAGÜZEL U., Semmler U., BUDAK E., BAKKAL M., Wertheim R.

Procedia CIRP, vol.40, pp.481-485, 2016 (Refereed Journals of Other Institutions)

**IV. Effect of Recycled LDPE Matrix on the Properties of Waste Cotton Fiber Reinforced WCF R Composites**

BODUR M. S. , HASRET ECE S., BERKALP Ö. B. , BAKKAL M.

Usak University Journal of Material Sciences, vol.1, pp.135-141, 2014 (Refereed Journals of Other Institutions)

**V. Machinability of BMG**

Bakkal M.

INNOVATION IN MATERIALS SCIENCE II, vol.521, pp.225-253, 2012 (Refereed Journals of Other Institutions)

## Supported Projects

Bakkal M., Kayhan M., Project Supported by Higher Education Institutions, Yüksek performanslı hibrit kompozitlerde delik delme işleminin deneysel ve analitik olarak incelenmesi, 2018 - 2020

Bakkal M., Project Supported by Higher Education Institutions, Glass Fiber/Waste Cotton Fabric Reinforced Hybrid Composites: Mechanical Investigations, 2016 - 2018

Bakkal M., Project Supported by Higher Education Institutions, RESİDUAL STRESS ANALYSİS ON CGI DEEP HOLE DRİLLİNG PROCESS / CGI DERİN DELME İŞLEMİNDE OLUŞAN KALINTI GERİLME ANALİZİ, 2015 - 2018

Bakkal M., Project Supported by Higher Education Institutions, Numerical Temperature Distribution Modeling On CGI Deep Hole Drilling With MQL, 2015 - 2018

Bakkal M., Project Supported by Higher Education Institutions, CGI Malzemesinin Delik Delme İşlemi Sırasında Oluşan Kuvvet ve MÖmentlerin Modellenmesi, 2014 - 2018

Bakkal M., Project Supported by Higher Education Institutions, Frezeyle Tornalama Operasyonunun Mekanik ve Isıl Modellenmesi, 2014 - 2018

Bakkal M., Project Supported by Higher Education Institutions, Kompakt Grafitli Dökme Demirin Minimum Yağlama Sistemi ile Derin DELİK Delme İşleminin Optimizasyonu ve Isıl Modellenmesi, 2014 - 2018

Bakkal M., Project Supported by Higher Education Institutions, Metalik Camların Üretim Parametrelerinin Mekanik Özelliklerine Etkisi, 2013 - 2018

Bakkal M., Project Supported by Higher Education Institutions, Development of Natural Fiber Reinforced Laminated Hybrid Composites, 2012 - 2018

Bakkal M., Project Supported by Higher Education Institutions, Kompakt Grafitli Dökme Demirin (CGI) Delik İşleminde, Minimum Miktarda Yağlama (MQL) Sisteminin Etkisi, 2012 - 2018

Bakkal M., Project Supported by Higher Education Institutions, Taşlama ve Frezleme Sonrası Camısı Metal Malzemede En Az Kalıntı Gerilem Oluşturan İşleme Parametrelerinin Belirlenmesi, 2011 - 2018

Bakkal M., Project Supported by Higher Education Institutions, CAMSİ METALLERİN TAŞLANMASINDA İLERLEME HIZININ ETKİLERİ, 2010 - 2018

Bakkal M., Project Supported by Higher Education Institutions, POLİMER ESASLI TEKSTİL KARMA MALZEMELERİN DENEYSEL VE SONLU ELEMANLARIN ANALİZİ, 2009 - 2018

Bakkal M., Project Supported by Higher Education Institutions, Z-Esaslı Kalın Camısı Metallerin Frezelenebilirliği, 2008 - 2018

Bakkal M., Project Supported by Higher Education Institutions, MQL Kullanımın CGI Tornalarında Takım Aşınmasına

Etkisi, 2013 - 2014

Bakkal M., Project Supported by Higher Education Institutions, Zirkonyum Esaslı Metalik Cam Geliştirilmesi, 2013 - 2014

Bakkal M., Project Supported by Higher Education Institutions, Sialon Takım İle Tornalanan Inconel 718'in İşlenebilirliğinin Belirlenmesi, 2011 - 2014

Bakkal M., Project Supported by Higher Education Institutions, Hibrid Kompozitlerin Yüksek Hızlı Deformasyondaki Mekanik Özelliklerinin Belirlenmesi, 2012 - 2013

Bakkal M., Project Supported by Higher Education Institutions, Frezleme İşleminin Camsı Metallerdeki Kalıntı Gerilme Oluşumuna Etkisi, 2010 - 2013

Bakkal M., Project Supported by Higher Education Institutions, Cam Elyaf Takviyeli Kompozitlerin İşlenebilirliğinin İncelenmesi, 2010 - 2013

Bakkal M., Project Supported by Higher Education Institutions, Taşlama İşleminin Camsı Metallerdeki Kalıntı Gerilme Oluşumuna Etkisi, 2010 - 2013

Bakkal M., Project Supported by Higher Education Institutions, KIRMA İŞLEMİNİN (GERİ DÖNÜŞÜM ) ATIK KUMAŞ TAKVİYELİ POLİMER MATRİSLİ KARMA MALZEMELERİNİN MEKANİK ÖZELLİKLERİ ÜZERİNE ETKİSİ, 2009 - 2013

Bakkal M., Project Supported by Higher Education Institutions, İyon Nitrürlemenin Temperleme Etkisinin Temperlenmiş Mertenzitik ve Beynitik Yapıların Mekanik Özelliklerine Etkisi, 2009 - 2013

Bakkal M., Project Supported by Higher Education Institutions, FREZE İLE KUMAŞ TAKVİYELİ POLİMER MATRİSLİ KOMPOZİTLERİN İŞLENEBİLİRLİĞİNİN İNCELENMESİ, 2010 - 2012

Bakkal M., Project Supported by Higher Education Institutions, Form Delme İşleminin Yaygın Saç Metal Uygulamalarına Yönelik Olarak Deneysel Bir Yolla İncelenmesi, 2008 - 2009

Bakkal M., Project Supported by Higher Education Institutions, Takım Malzemelerinin Ti6Al4V Alaşımının İşlenebilirliğine Etkisi, 2008 - 2009

Bakkal M., Project Supported by Higher Education Institutions, Zr-Co ve Fe Esaslı Kalın Camsı Metallerin Üretilmesi ve Karakterizasyonu, 2007 - 2009

Bakkal M., Project Supported by Higher Education Institutions, Zirkonyum (Zr) Esaslı Camsı Metallerin Frezede İşlenmesi Sırasında Oluşan Kesme Kuvvetleri, Takım Aşınması ve İş Parçası Yüzey Pürüzlülüğünün İncelenmesi, 2006 - 2009

Bakkal M., Project Supported by Higher Education Institutions, Ti6Al4V Titanyum Alaşımının İşlenebilirliğinin Isıl İşleme Artırılması, 2007 - 2008

## Citations

Total Citations (WOS):551

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