

Prof. ŞİNASI BARIŞ EMRE

Personal Information

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International Researcher IDs

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Education Information

Doctorate, Ankara University, Fen Bilimleri Enstitüsü, Fizik Mühendisliği (Dr), Turkey 2003 - 2008

Postgraduate, Ankara University, Fen Bilimleri Enstitüsü, Fizik Mühendisliği (YI) (Tezli), Turkey 2000 - 2003

Undergraduate, Middle East Technical University, Fen-Edebiyat Fakültesi, Fizik Bölümü, Turkey 1995 - 2000

Dissertations

Doctorate, La_{1-x}R_xMn₂Si₂ (R: Pr, Nd, Sm, Gd, Tb, Dy, Er, Ho, Ce) alaşımlarının hacimsel (bulk), şerit ve nano yapılarının, kristal yapılarının, manyetik direnç, ısı ısıtması ve manyetokalorik özelliklerinin incelenmesi, Ankara University, Fen Bilimleri Enstitüsü, Fizik Mühendisliği (Dr), 2008

Postgraduate, La_{1-x}Tb_xMn₂Si₂ intermetalik bileşiklerinin yapısal ve magnetik özellikleri, Ankara University, Fen Bilimleri Enstitüsü, Fizik Mühendisliği (YI) (Tezli), 2003

Research Areas

Physics

Academic Titles / Tasks

Professor, Ankara University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2021 - Continues

Associate Professor, Ankara University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2014 - 2021

Assistant Professor, Ankara University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2013 - 2014

Research Assistant, Ankara University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2002 - 2013

Courses

CONDENSED MATTER PHYSICS , Undergraduate, 2022 - 2023

MECHANICS , Undergraduate, 2022 - 2023

PHYSICS OF CRYSTALS , Undergraduate, 2022 - 2023

Kathal Fiziği II, Undergraduate, 2014 - 2015, 2013 - 2014

Fizik II, Undergraduate, 2014 - 2015, 2013 - 2014, 2012 - 2013

Fizik I, Undergraduate, 2014 - 2015, 2013 - 2014, 2012 - 2013

Advising Theses

- Emre Ş. B., Investigation of Elastocaloric Properties of Spin Crossover Films, Doctorate, E.KAVAK(Student), 2024
- EMRE Ş. B., Investigation of martensitic phase transformation and caloric properties of Ti doped NiMnIn magnetic shape memory alloys, Postgraduate, E.ODA(Student), 2019
- EMRE Ş. B., Investigation of martensitic phase transformation and caloric properties of Ti doped NiMnIn magnetic shape memory alloys, Postgraduate, T.KARABACAK(Student), 2019
- Emre B., Investigation of martensitic transformation and magnetocaloric effect in nickel – cobalt – mangan – tin magnetic shape memory alloys, Postgraduate, V.Erdoğan(Student), 2018
- EMRE Ş. B., Investigation of martensitic transformation and magnetocaloric effect in nickel – cobalt – mangan – tin magnetic shape memory alloys, Postgraduate, V.ERDOĞAN(Student), 2018

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Investigation of the effect of martensitic phase transition temperature and Curie temperature difference on magnetic and magnetocaloric properties under low magnetic field on Si-doped Ni-Mn-In Heusler alloys**
Kavak E., Cicek M. M., Saritas S., Emre B.
PHYSICA SCRIPTA, no.9, 2024 (SCI-Expanded)
- II. **Elastocaloric, barocaloric and magnetocaloric effects in spin crossover polymer composite films**
Lünser K., Kavak E., Gürpınar K., Emre Ş. B., Atakol O., Stern-Taulats E., Porta M., Planes A., Lloveras P., Tamarit J., et al.
NATURE COMMUNICATIONS, vol.15, no.1, pp.6171, 2024 (SCI-Expanded)
- III. **Revealing contrary contributions of the magnetic and lattice entropy to the inverse magnetocaloric effect in magnetic shape memory alloy**
Emre B., Yuce S., Kavak E., Saritas S., Cicek M. M., Yildirim O., Duman E., Albertini F., Fabbri S.
Journal of Applied Physics, vol.135, no.21, 2024 (SCI-Expanded)
- IV. **Influence of pH value of precursor on growth, structural, and optical properties of Cu₂O thin films grown in Mist-CVD**
Kutlu-Narin E., NARİN P., EMRE Ş. B., LİŞESİVDİN S. B.
Physica B: Condensed Matter, vol.681, 2024 (SCI-Expanded)
- V. **Tuning of the magneto-caloric effects in Ni₄₃Mn₄₆In₁₁ magnetic shape memory alloys by substitution of boron**
Saritas S., ÇİÇEK M. M., KAVAK E., GURPINAR K., YILDIRIM O., YUCE S., ATAKOL O., EMRE B.
JOURNAL OF PHYSICS-CONDENSED MATTER, no.7, 2024 (SCI-Expanded)
- VI. **Investigation of the inverse magnetocaloric effect with the fraction method**
Yuce S., KAVAK E., YILDIRIM O., BRUNO N., EMRE Ş. B.
Journal of physics. Condensed matter : an Institute of Physics journal, vol.35, no.34, 2023 (SCI-Expanded)
- VII. **Investigation of the complex magnetic behavior of Ni_{46.86}Co_{2.91}Mn_{38.17}Sn_{12.06} (at%) magnetic shape memory alloy at low temperatures**
Yildirim O., YÜCE EMRE S., BRUNO N. M., DOĞAN E., YURTSEVEN H. H., DUMAN E., EMRE B.
PHYSICA SCRIPTA, vol.97, no.8, 2022 (SCI-Expanded)
- VIII. **Giant and Reversible Barocaloric Effect in Trinuclear Spin-Crossover Complex Fe₃(bntz)₆(tcnset)₆**
Romanini M., Wang Y., GURPINAR K., ORNELAS G., LLOVERAS P., ZHANG Y., ZHENG W., BARRIO M., AZNAR A., GRACIA-CONDAL A., et al.
Advanced Materials, vol.33, no.10, 2021 (SCI-Expanded)
- IX. **Effect of the low constituent boron on martensitic transformation, magnetic, and magnetocaloric**

properties of Ni₅₀Mn₃₅In₁₅ Heusler alloys

ÇİÇEK M. M., Saritas S., Yildirim O., EMRE Ş. B.

JOURNAL OF ALLOYS AND COMPOUNDS, vol.845, 2020 (SCI-Expanded)

- X. **Investigation of Ti substituting for Ni on magnetic, magnetocaloric and phase transition characteristics of Ni₅₀Mn₃₆In₁₄**
Emre B., Yildirim O., DUMAN E.
Materials Research Express, vol.6, no.7, 2019 (SCI-Expanded)
- XI. **Martensitic transformation and magnetocaloric properties of NiCoMnSn magnetic shape memory alloys**
Emre B., YÜCE EMRE S., Bruno N. M., Karaman I.
Intermetallics, vol.106, pp.65-70, 2019 (SCI-Expanded)
- XII. **Analysis of Magnetization as a Function of Temperature for CoMn_{1-x}FexGe**
Yuce S., Dogan E. K., Emre B., Bruno N. M., Karaman I., YURTSEVEN H. H.
Journal of Superconductivity and Novel Magnetism, vol.30, no.12, pp.3587-3594, 2017 (SCI-Expanded)
- XIII. **Accessibility investigation of large magnetic entropy change in CoMn_{1-x}FexGe**
Yuce S., Bruno N. M., Emre B., Karaman I.
Journal of Applied Physics, vol.119, no.13, 2016 (SCI-Expanded)
- XIV. **Calculation of the H-T phase diagram, magnetization and susceptibility in layered structures**
YURTSEVEN H. H., Dogan E. K., Emre B., Acet M.
Journal of Magnetism and Magnetic Materials, vol.393, pp.544-550, 2015 (SCI-Expanded)
- XV. **Tailoring barocaloric and magnetocaloric properties in low-hysteresis magnetic shape memory alloys**
Stern-Taulats E., Planes A., Lloveras P., Barrio M., Tamarit J., Pramanick S., Majumdar S., YÜCE EMRE S., Emre B., Frontera C., et al.
Acta Materialia, vol.96, pp.324-332, 2015 (SCI-Expanded)
- XVI. **Ferromagnetic and antiferromagnetic properties in layered structures (La_{0.6}Nd_{0.4}Mn₂Si₂)**
Dogan E. K., Emre B., YURTSEVEN H. H.
Journal of Molecular Structure, vol.1089, pp.178-183, 2015 (SCI-Expanded)
- XVII. **Analysis of the Magnetization as a Function of the Magnetic Field at the Transition Temperature for La_{0.6}Nd_{0.4}Mn₂Si₂**
YURTSEVEN H. H., Dogan E. K., Emre B., Acet M.
Journal of Superconductivity and Novel Magnetism, vol.28, no.3, pp.873-876, 2015 (SCI-Expanded)
- XVIII. **Effect of niobium addition on the martensitic transformation and magnetocaloric effect in low hysteresis NiCoMnSn magnetic shape memory alloys**
Emre B., Bruno N. M., YÜCE EMRE S., Karaman I.
Applied Physics Letters, vol.105, no.23, 2014 (SCI-Expanded)
- XIX. **Barocaloric effect in metamagnetic shape memory alloys**
Manosa L., Stern-Taulats E., Planes A., Lloveras P., Barrio M., Tamarit J., Emre B., YÜCE EMRE S., Fabbri S., Albertini F.
Physica Status Solidi (B) Basic Research, vol.251, no.10, pp.2114-2119, 2014 (SCI-Expanded)
- XX. **NMR study of ferromagnetic and antiferromagnetic states of La_{1-x}NdxMn₂Si₂ (x = 0.35 and 0.40)**
Shimizu K., Matsumoto M., Yamaguchi M., Emre B., Dincer I., Elerman Y.
Journal of Alloys and Compounds, vol.584, pp.640-645, 2014 (SCI-Expanded)
- XXI. **An investigation of magnetocaloric effect and its implementation in critical behavior study of La_{1-x}NdxMn₂Si₂ compounds**
Emre B., Dincer I., Elerman Y., Aksoy Esinoğlu S.
Solid State Sciences, vol.22, pp.1-7, 2013 (SCI-Expanded)
- XXII. **Large reversible entropy change at the inverse magnetocaloric effect in Ni-Co-Mn-Ga-In magnetic shape memory alloys**
Emre B., Yuce S., Stern-Taulats E., Planes A., Fabbri S., Albertini F., Manosa L.
Journal of Applied Physics, vol.113, no.21, 2013 (SCI-Expanded)

- XXIII. **Metamagnetic phase transitions in La_{1-x}Nd_xMn₂Si₂**
Emre B., YURTSEVEN H. H.
Journal of Superconductivity and Novel Magnetism, vol.26, no.4, pp.1411-1413, 2013 (SCI-Expanded)
- XXIV. **Magnetothermal study of La_{1-x}Nd_xMn₂Si₂ (x=0.35 and 0.40) compounds**
Emre B., Dincer I., Elerman Y.
Physica B: Condensed Matter, vol.413, pp.82-85, 2013 (SCI-Expanded)
- XXV. **Analysis of heat capacity and magnetothermal properties of the La_{0.775}Gd_{0.225}Mn₂Si₂ compound**
Emre B., Dincer I., Elerman Y.
Intermetallics, vol.31, pp.16-20, 2012 (SCI-Expanded)
- XXVI. **Barocaloric effect in the magnetocaloric prototype Gd₅Si₂Ge₂**
Yuce S., Barrio M., Emre B., Stern-Taulats E., Planes A., Tamarit J., Mudryk Y., Gschneidner K. A., Pecharsky V. K., Manosa L.
Applied Physics Letters, vol.101, no.7, 2012 (SCI-Expanded)
- XXVII. **Investigation of the nature of the unusual magnetic behavior of La_{0.65}Nd_{0.35}Mn₂Si₂ compound by neutron diffraction study**
Emre B., Dincer I., Hoelzel M., Senyshyn A., Elerman Y.
Journal of Magnetism and Magnetic Materials, vol.324, no.4, pp.622-630, 2012 (SCI-Expanded)
- XXVIII. **Thermal and magnetothermal properties of La_{0.5}Pr_{0.5}Mn₂Si₂**
Emre B., Dincer I., DUMAN E., Elerman Y.
Solid State Communications, vol.151, no.24, pp.2004-2007, 2011 (SCI-Expanded)
- XXIX. **Heat capacity and magnetothermal properties of La_{0.8}Sm_{0.2}Mn₂Si₂**
Emre B., Dincer I., Elerman Y.
Solid State Communications, vol.150, no.29-30, pp.1279-1282, 2010 (SCI-Expanded)
- XXX. **Magnetic and magnetocaloric results of magnetic field-induced transitions in La_{1-x}Ce_xMn₂Si₂ (x=0.35 and 0.45) compounds**
Emre B., Dincer I., Elerman Y.
Journal of Magnetism and Magnetic Materials, vol.322, no.4, pp.448-453, 2010 (SCI-Expanded)
- XXXI. **Inverse and conventional magnetic entropy change in La_{0.8}Sm_{0.2}Mn₂Si₂ and La_{0.775}Gd_{0.225}Mn₂Si₂ compounds**
Emre B., Dincer I., Elerman Y., Duman E.
Physica Scripta, vol.80, no.5, 2009 (SCI-Expanded)
- XXXII. **Magnetocaloric effect in Tb₅Si_{2-x}Ge_{2-x}Fe_{2x} (0 ≤ 2x ≤ 0.1) compounds**
Yuezueak E., Emre B., Yucel A., Elerman Y.
Journal of Alloys and Compounds, vol.476, no.1-2, pp.929-934, 2009 (SCI-Expanded)
- XXXIII. **Magnetic and Magnetocaloric Result of Magnetic Field-induced Transitions in La_{1-x}Ce_xMn₂Si₂**
Emre B., Dincer I., Elerman Y.
ACTA CRYSTALLOGRAPHICA A-FOUNDATION AND ADVANCES, vol.65, 2009 (SCI-Expanded)
- XXXIV. **Antiferromagnetic-ferromagnetic crossover in La_{0.5}Pr_{0.5}Mn₂Si₂ and its consequences on magnetoelastic and magnetocaloric properties**
Emre B., Aksoy Esinođlu S., Posth O., Acet M., Duman E., Lindner J., Elerman Y.
Physical Review B - Condensed Matter and Materials Physics, vol.78, no.14, 2008 (SCI-Expanded)

Articles Published in Other Journals

- I. **La_{1-x}Ce_xMn₂Si₂ (x=0.35 ve 0.45) kritik davranışının manyetik entropi deđişim bađlılıđına göre araştırılması**
EMRE Ş. B.
Balıkesir Üniversitesi Fen Bilimleri Enstitüsü Dergisi, pp.1-12, 2018 (Peer-Reviewed Journal)

Books & Book Chapters

I. Entropi

EMRE Ş. B., SELBUZ L.

in: Fizik İlkeler ve Pratik, Abdullah Verçin, Ali Ulvi Yilmazer, Editor, Nobel, Ankara, pp.501-528, 2015

Refereed Congress / Symposium Publications in Proceedings

I. Revealing the low and high temperature magnetic behavior of Ni_{46.86}Co_{2.91}Mn_{38.17}Sn_{12.06} shape memory compound

YÜCE EMRE S., KİLİT DOĞAN E., DUMAN E., Yıldırım O., EMRE Ş. B.

INTERNATIONAL EURASIAN CONFERENCE ON SCIENCE, ENGINEERING AND TECHNOLOGY (EURASIAN SCIENTECH 2018), 22 - 23 November 2018

II. Magnetic Structure and Phase Transition of Ni₄₅Co₅Mn₃₉Sn₁₁ Magnetic Shape memory Compound

Yıldırım O., YÜCE EMRE S., ERDOĞAN V., DUMAN E., EMRE Ş. B.

The International Conference on Material Science and Technology in Cappadocia (IMSTEC 2018), 17 - 19 September 2018

III. Calorimetric Study of Hysteresis Effects on the Magnetocaloric Effect

EMRE Ş. B., Stern Taulat E., YÜCE EMRE S., Bruno N., Planes A., Manosa L., Karaman I.

5. CIMTEC 5th International Conference "Smart and Multifunctional Materials, Structures and Systems, 5 - 09 June 2016

IV. Martensitic transformation and effect of hysteresis on the magnetocaloric properties of NiCoMnSn magnetic shape memory alloys

EMRE Ş. B., YÜCE EMRE S., Bruno N., Karaman İ.

European Symposium on Martensitic Transformations (ESOMAT), Antwerp, Belgium, 14 - 18 September 2015

Supported Projects

Emre Ş. B., TÜBİTAK Project, Termoelektrik Modüllerde Kullanılacak Üstün Özellikli Termoelektrik Malzemelerin ve İnce Filmlerin Geliştirilmesi, 2019 - 2026

Emre Ş. B., Atakol O., Duman E., TÜBİTAK Project, Spin-Crossover Filmlerin Elastokalorik Özelliklerinin Açığa Çıkarılması, 2021 - 2024

Emre Ş. B., Atakol O., TÜBİTAK Project, Spin Cross-Over Malzemelerin Gizli Özelliği: Devasa Barokalorik Potansiyel, 2018 - 2022

Emre Ş. B., TÜBİTAK Project, Sc_{1-x}Ti_xF₃ Malzemesinde Barokalorik Etkinin Araştırılması, 2018 - 2020

EMRE Ş. B., Project Supported by Higher Education Institutions, Harekete Duyarlı Aydınlatma ve Güvenlik Sistemi Yapımı, 2017 - 2018

EMRE Ş. B., Project Supported by Higher Education Institutions, NiCoMnSn ailesinden düşük histerisli malzemelerin manyetik ve manyetokalorik özelliklerinin incelenmesi, 2015 - 2016

EMRE Ş. B., Project Supported by Higher Education Institutions, Proje No: 08B4343005 Ferromanyetik Ni- ve Co-tabanlı Heusler Alaşımlarının Yapısal, Manyetokalorik, Isısal, Elektriksel ve Spintronik Özelliklerinin İncelenmesi, 2008 - 2011

EMRE Ş. B., TÜBİTAK Project, La_{0.65}Nd_{0.35}Mn₂Si₂ Alaşımının Manyetik, Isısal Ve Manyetokalorik Özelliklerine Manyetik Alanın Etkisinin Araştırılması, 2009 - 2010

EMRE Ş. B., Project Supported by Other Official Institutions, Ferromanyetik Ni ve Co Tabanlı Heusler Alaşımlarının Yapısal Isısal Elektriksel ve Spintronik Özelliklerinin İncelenmesi, Proje No: 08B4343005, 2007 - 2010

EMRE Ş. B., Other International Funding Programs, Nadir yer elementi grup 4 sistemlerinin manyetik manyetokalorik etkileri ve yapısal karakterlerini incelenmesi, 2005 - 2008

EMRE Ş. B., KABAK M., ELMALI A., TÜBİTAK Project, R_xR_{1-x}Mn₂Ge₂ RMn₆Ge₆ xGax ve R_xR_{1-x}Mn₆Ge₆ R R Ce Pr Sm La Y Tb Dy Nd ve T Fe Co Cu Ni Cr Alaşım ve Nanoalaşımların Fiziksel Özellikleri ve Magnetik Direnci, 2002 - 2005

Metrics

Publication: 40

Citation (WoS): 596

Citation (Scopus): 617

H-Index (WoS): 12

H-Index (Scopus): 12

Scholarships

doktora sonrası araştırma bursu, YOK, 2013 - 2013

2219 doktora sonrası araştırma bursu, TUBITAK, 2011 - 2012