

## **NAZIM BABACAN**

Sivas University of Science and Technology  
Faculty of Engineering and Natural Sciences,  
Department of Mechanical Engineering  
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### **EDUCATION**

- PhD** Gazi University, Ankara, Turkey  
Department of Mechanical Engineering 2013-2017
- MSc** TOBB University of Economics and Technology, Ankara, Turkey  
Department of Mechanical Engineering (Full Scholarship) 2010-2013
- BSc** TOBB University of Economics and Technology, Ankara, Turkey  
Department of Mechanical Engineering (Full Scholarship) 2005- 2010

### **EXPERIENCE**

- 01/2020 –** Assist Prof. Dr.  
Sivas University of Science and Technology, Sivas, Turkey  
Department of Mechanical Engineering
- 03/2019 – 03/2021** Postdoctoral Scholar  
Leibniz Institute for Solid State and Materials Research (IFW  
Dresden), Dresden, Germany  
Institute for Complex Materials  
Alloy Design and Processing Department
- 11/2017 – 01/2020** Dr. Res. Assist.  
Gazi University, Ankara, Turkey  
Department of Mechanical Engineering
- 09/2015 – 09/2016** Visiting Scholar  
Texas A&M University, College Station, TX, A.B.D.  
Department of Materials Science and Engineering

**09/2012 - 11/2017**

Res. Assist.  
Gazi University, Ankara, Turkey  
Department of Mechanical Engineering

**09/2010 - 09/2012**

Res. Assist.  
TOBB University of Economics and Technology, Ankara, Turkey  
Department of Mechanical Engineering

## **PUBLICATIONS**

### **Indexed by SCI, SCI-EXP**

- **Nazim Babacan**, “Shape Memory Characteristics of Silver-Added Fe–30Mn–6Si Alloy” *Transactions of the Indian Institute of Metals*, 2022.
- **Nazim Babacan**, Fabian Kochta, Volker Hoffmann, Thomas Gemming, Uta Kühn, Lars Giebeler, Annett Gebert, Julia Hufenbach, “Effect of silver additions on the microstructure, mechanical properties and corrosion behavior of biodegradable Fe-30Mn-6Si” *Materials Today Communications*, 28 (102689), 2021.
- **Nazim Babacan**, Emre Yurtkuran, Arif Balci, Magdalena Bieda-Niemiec, Anna Jarzebska, “Effects of non-isothermal aging on microstructure and mechanical Properties of WE43 alloy” *Journal of Materials Engineering and Performance*, 30 (7909-7916), 2021.
- **Nazim Babacan**, Simon Pauly, Tobias Gustmann, “Laser powder bed fusion of a superelastic Cu-Al-Mn shape memory alloy” *Materials and Design*, 203 (109625), 2021.
- **Nazim Babacan**, Mustafa Caliskan, Furkan Alay, Nail Pehlivanli, “Numerical simulation of Cu-Al-Mn endodontic instruments under bending and torsional conditions” *Journal of Materials Engineering and Performance*, 29 (4669-4676), 2020.
- **Nazim Babacan**, Muhammad Bilal, Ceylan Hayrettin, Jun Liu, Othmane Benafan, Ibrahim Karaman, “Effects of cold and warm rolling on the shape memory response of Ni<sub>50</sub>Ti<sub>30</sub>Hf<sub>20</sub> high-temperature shape memory alloy” *Acta Materialia*, 157 (228-244), 2018.
- **Nazim Babacan**, Ji Ma, Osman Selim Turkbac, Ibrahim Karaman, Benat Kockar, “The effects of cold rolling and the subsequent heat treatments on the shape memory and the superelasticity characteristics of Cu<sub>73</sub>Al<sub>16</sub>Mn<sub>11</sub> shape memory alloy” *Smart Materials and Structures*, 27 (015028), 2018.

- **Nazim Babacan**, Kadri Can Atli, Osman Selim Turkbac, Ibrahim Karaman, Benat Kockar, “The effect of dynamic aging on the cyclic stability of Cu<sub>73</sub>Al<sub>16</sub>Mn<sub>11</sub> shape memory alloy” *Materials Science and Engineering A*, 701 (352-358), 2017.
- Istemi Baris Ozsoy, **Nazim Babacan**, “Finite element simulations of microstructure evolution in stress-induced martensitic transformations” *International Journal of Solids and Structures*, 81(361-372), 2016.

### Indexed by Other Databases

- **Nazim Babacan**, Istemi Baris Ozsoy, “Uniaxial Mechanical Response of Polycrystalline Shape Memory Alloys” *Applied Mechanics and Materials*, Vol. 390(537-541), 2013.
- **Nazim Babacan**, Ilkay Gunel, Istemi Baris Ozsoy, “Martensitic Phase Transformations in CuAlNi Shape Memory Alloys” *Advanced Materials Research*, Vol. 445(1076-1081), 2012.

### International Conferences

- **Nazim Babacan**, Tobias Gustmann, “Development of laser powder bed fusion process parameters for Cu-Al-Mn shape memory alloys” *Additive Manufacturing Conference (AMC Turkey 2021)*, Istanbul, Turkey, 2021.
- Mustafa Caliskan, **Nazim Babacan**, Furkan Alay, Nail Pehlivanli, “Comparison of mechanical performances Of NiTi And Cu-Al-Mn shape memory alloys endodontic rotary instruments” 5. *International Conference on Material Science and Technology (IMSTEC2020)*, Kapadokya, Turkey, 2020.
- **Nazim Babacan**, Muhammad Bilal, Ceylan Hayrettin, Ibrahim Karaman, Othmane Benafan, “The influence of cold and warm rolling on the thermo-mechanical behavior of near-equiatomic NiTiHf<sub>20</sub> high-temperature shape memory alloy” *High Temperature Shape Memory Alloys (HTSMAs 2018)*, Irsee, Germany, 2018.
- **Nazim Babacan**, Kadri Can Atli, Osman Selim Turkbac, Ibrahim Karaman, Benat Kockar, “Effect of bainite formation on martensitic transformation and cyclic stability of Cu-Al-Mn shape memory alloys” *International Conference on Martensitic Transformations (ICOMAT)*, Chicago, U.S.A., 2017.
- **Nazim Babacan**, Ji Ma, Osman Selim Turkbac, Ibrahim Karaman, Benat Kockar, “Influence of grain size on superelasticity and actuation properties of Cu-Al-Mn shape memory alloys” *9th World Congress on Materials Science and Engineering*, Rome, Italy, 2017.

- **Nazim Babacan**, Bunyamin Comlekci, Kadri Can Atli, Benat Kockar, “Superelastic behaviour of thermomechanically treated Cu-Al-Mn alloys” *10th European Symposium on Martensitic Transformations (ESOMAT)*, Antwerp, Belgium, 2015.
- Suheyly Yuce Emre, **Nazim Babacan**, Kadri Can Atli, Benat Kockar, “The effect of the thermo-mechanical treatments on mechanical and superelastic properties of 74.8Ti-25.2Nb (at%) alloys” *10th European Symposium on Martensitic Transformations (ESOMAT)*, Antwerp, Belgium, 2015.
- **Nazim Babacan**, Istemi Baris Ozsoy, “Uniaxial Mechanical Response of Polycrystalline Shape Memory Alloys” *International Conference on Mechanical and Aerospace Engineering (ICMAE)*, Moscow, Russia, 2013.
- **Nazim Babacan**, Ilkay Gunel, Istemi Baris Ozsoy, “Martensitic Phase Transformations in CuAlNi Shape Memory Alloys” *International Conference on Advances in Materials & Processing Technologies (AMPT)*, İstanbul, Turkey, 2012.
- Ilkay Gunel, **Nazim Babacan**, Istemi Baris Ozsoy, “CuAlNi Şekil Hafızalı Alaşımında Martensitik Faz Dönüşümleri” *International Advanced Technologies Symposium (IATS)*, Elazığ, Turkey, 2011.

## Natioanl Conferences

- Mehmet Ali Guler, **Nazim Babacan**, Ugur Yolum, Yasir Demiryurek, “Conwep Yöntemi ile Mayın Patlama Benzetimi” *Savunma Teknolojileri Kongresi (SAVTEK)*, Ankara, Turkey, 2010.

## PROJECTS

**02/2022– 02/2024**

**Principal Investigator**, TUBITAK 3501

“Investigation of ballistic performance of additively manufactured AlSi10Mg alloy microlattice structures by experimental and numerical studies”

**03/2019– 03/2021**

**Principal Investigator**, Alexander Von Humboldt Foundation

“Modulating functionality in selectively laser melted Cu-Al-Mn and Fe-Mn-Al-Ni shape memory alloys”

**04/2018 – 04/2019**

**Principal Investigator**, Gazi University Scientific Research Projects

“Enhancement of mechanical properties of WE43 magnesium alloy using non-isothermal aging”

**09/2015 – 05/2016**

**Researcher**, Air Force Office of Scientific Research (AFOSR)  
“Processing of equiatomic and Ti-rich NiTiHf high temperature shape memory alloys”

**05/2010 – 05/2012**

**Scholar**, TUBITAK 3501  
“Martensitic phase transformations in inelastic materials”

### **SCHOLARSHIPS**

**11/2021 – 11/2022**

Alexander Von Humboldt  
Return Fellowship

**03/2019 – 03/2021**

Alexander Von Humboldt  
Georg Forster Research Fellowship

**03/2013 – 03/2017**

TUBITAK BIDEB 2211-A  
Domestic PhD Scholarship

**09/2015 – 09/2016**

TUBITAK BIDEB 2214-A  
Doctoral Research Scholarship in Foreign Countries

### **COURSES TAUGHT**

Metal Additive Manufacturing  
Finite Element Analysis in Solid Mechanics  
Differential Equations  
Introduction to Numerical Analysis  
Computer Aided Technical Drawing  
Engineering Mechanics