

# 9. Industry, Innovation and Infrastructure



Scholarly Output:

**70**



International Collaboration:

**26**



Field-weighted Citation Impact:

**1.53**



Number of Total Projects:

**26**



Number of Events:

**36**

**1.**

## Knowledge, Technology Transfer and Entrepreneurship Center and Onsite Academy

Ozyegin University has an umbrella unit that encompasses the OzU Technology and Transfer Office (TTO), Center for Entrepreneurship, Lifelong Learning Academy (LLA) and Openfab that work in cooperation to coordinate and enhance OzU's contribution to knowledge dissemination. With the support of the unit, the university has **314 patent applications**, **107 granted patents** and **4 granted utility models**.

With a unique UIC model: Onsite Academy, Vestel (2013), Turkcell (2015) and Turk Telekom (2020) companies support academic chairs at OzU which entails salaries and the research budget. Research activities are carried out and joint patent applications are made with the companies. As of 2021-22 academic year, **239 students working in these companies** are graduate students at OzU, 321 company employees are a part of the OzU alumni, 55 R&D projects had been conducted and 126 joint patents have been acquired.

### — OzU Center for Entrepreneurship Seminars and Training:

#### OzU Entrepreneurship Factory 11. Health and Education Foundation

##### Schools' Mission Possible Project: Entrepreneurship Seminars

The 5th Mission Possible project competition, which has the goal of contributing to a sustainable future, aims to give our **high schoolers** the opportunity to design their projects in the most efficient way. Ozyegin University provides a **6-module education program** which gives students the opportunity to gain hands-on experience in **project management, leadership and entrepreneurship**.

#### Master Club Training within the Scope of the Platform for Women

##### Leaders in Real Estate:

GKL MasterClub Training offered by the Platform for Women Leaders in Real Estate focused on **"Technology"** and **"Sustainability"** for those who want to deepen their professional life, **"Entrepreneurship"** for those who want to establish and develop their own business, and **"Personal Development"** for those who need individual development in order to overcome the difficulties in business life.

**2.**

## Higher Education Innovation Growth and Training- HEIght Project

HEIght project supervised by the OzU Center for Entrepreneurship is supported by the European Institute of Innovation and Technology (EIT) Higher Education Institutions (HEI): Innovation Capacity Building for Higher Education Program. The goal of the project is to **boost the entrepreneurial and innovation capacity of universities and their stakeholders such as students, faculty, staff and alumni**.



**Call for International Entrepreneurs**

HEIght Project offers an exclusive entrepreneurship program for OzU International Students!

With this project OzU aims at creating more opportunities for International Students to be more involved in Entrepreneurship Ecosystem. As of 2021-22 academic year, **international students from 20 countries** are trained as a part of the program. Entrepreneurs who complete the program, receive a Certificate of Achievement and benefit from financial support opportunities for their eligible projects. **“Investment Preparation Program for Technology Entrepreneurs”** is another component of the HEight project, which is carried out in cooperation with Kavlak Law Firm. The program aims to develop the capacity of technology entrepreneurs with rapid growth potential to manage their investment processes in the most efficient way.

### 3.

## Communications Theory and Technology Research Group

CT&T Research Group is led by **Prof. Murat Uysal** and conducts fundamental and applied research on the **physical layer aspects of communication systems**. Current research projects address the physical layer design of wireless communication systems, visible light communications, free-space optical communications, ultraviolet communications, underwater communications and vehicular networking among others.



### 4.

## Additive Manufacturing Alloys Development, Application, and Research Center

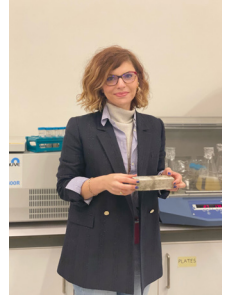
Within the scope of Istanbul Development Agency (ISTKA) Innovative Istanbul Financial Support Program for 2021, the project titled **“Additive Manufacturing Alloys Development, Application, and Research Center”** is coordinated by **Assoc. Dr. Güneş Güven Yapıcı** from the Mechanical Engineering Department.

In the project, Turkish-German University takes place as a partner, and Tuşas Motor Sanayii A.Ş., TST Rakor ve Tibbi Aletler Sanayii, Birinci Otomotiv San. Ve Tic. A.Ş., Ortopedik Tibbi Malzeme İmalatçıları (ORDER) and Saha İstanbul Savunma Havacılık ve Uzay (SAHA) are also Associate Partners as sector representatives.

This project aims to establish a **specialized center** where solutions for the development of value-added products are implemented as a result of the **digital transformation of the manufacturing industry**. At the center, technology for additive manufacturing materials will be enriched with the support of research activities. The solutions will be transferred to enterprises in the relevant sector and researchers in the field to provide for the dissemination of the relevant technology and the transformation of the national economy.

### 5.

## Construction Materials inspired from Nature



**Dr. Zeynep Başaran Bundur** from the Civil Engineering Department at directs her research studies with the vision of overcoming the global problems of the construction sector. In 2013, Dr. Bundur initiated the **Sustainable and Adapted Building Materials (SAM)** research group, the first multidisciplinary research group in Turkey to train researchers in microbiology, material science, and civil engineering. Recently, Dr. Bundur succeeded in **transforming concrete into a self-healing almost like a living material by adding biological additives to triggers the biomineralization in cracks**.

Dr. Bundur works on alternative **cost-efficient** methods on incorporating bacterial cells to cement-based mixture to provide the self-healing ability. She is currently working on **“Natural minerals as a Protection Barrier for Microorganisms in Self-Healing Mortars”** TÜBİTAK project integrating industrial leaders on application of self-healing cementitious materials.

Dr. Bundur also works on bio-based rheology modifying admixtures for cement-based materials where she uses bacterial cells to improve the fresh state properties of concrete. Her **invention “Cement-Based Compositions with Improved Rheological Properties and Methods for Production Thereof”** has been registered as a patent and has a Technology Readiness Level of 5. The patent was awarded with gold and silver medals in 2 different fairs.

Another research area that Dr. Bundur works on is the development of a **sustainable cement-based mortar suitable for 3D printers**. She has 4 major grants which were granted by national and international funds collaborating with other researchers and industry leaders. She has also been collaborating with researchers from Turkey and Slovenia in **revalorizing end-of-life materials as alternative SCM in concrete production and developing a “zero-carbon” concrete production ecosystem**.