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# ISGRS 2018

1st INTERNATIONAL SYMPOSIUM ON GRADUATE RESEARCH IN SCIENCE
FOCUS ON ENTREPRENEURSHIP AND INNOVATION



## ABSTRACTS BOOK

# ISGRS 2018

## 1st International Symposium on Graduate Research in Science

## Focus on Entrepreneurship and Innovation

*4-6 October Istanbul/TURKEY*

Dear Student Friends,

The scientific organization of "1st International Symposium on Graduate Research in Science Focus on Entrepreneurship and Innovation", which will be held for the first time this year, will be conducted as a student-focused symposium. We are excited and proud to see your high quality works under the guiding of science together with your energy and brilliant intelligence. It is the first experience and first excitement of some of you in this scientific organization. We are very satisfied to present you the symposium as our management of this scientific activity that organized by the Institute of Graduate Studies in Science and Engineering.

The main theme of the symposium was determined as Entrepreneurship and Innovation in Graduate Education. In this context, our Symposium aims to bring our students and graduate students together according to their interests and to spread their knowledge and experiences for their future researches.

In this environment where researching minds are in need of our country and this need is eliminated by your efforts, walking in the footsteps of science, that is the only true truth, is perhaps one of the most important decisions of your life. Make sure that every second you spend on a scientific study has a value greater than value. At the end of this time, the end of the produced works and presenting them in scientific organizations motivate you and us naturally and enables us to look forward to the future with more hopeful.

The symposium consists of 78 Oral and 147 Poster presentations with a total of 225 participants from 35 universities and different countries. In addition, the fact that our invited speakers will share their experiences and advice with you will be important for the future positive results of the symposium.

We are very pleased to see you among us. I wish you success in the way of your research namely in the way of science.

Prof. Dr. Şah İsmail KIRBAŞLAR

Chairman

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- Aquatic Sciences

*(Aquaculture and Fish Diseases, Freshwater Resources Management, Marine Biology, Fisheries Technology and Management, Seafood Processing Technology and Safety)*

- Architecture
- Astronomy and Space Sciences
- Biology

*(Botanic, General Biology, Hydrobiology, Radiobiology, Zoology, Basic and Industrial Microbiology, Molecular Biology)*

- Biomedical Engineering
- Biotechnology
- Chemical Engineering

*(Process and Reactor Design, Unit Operations and Thermodynamics, Chemical Technologies)*

- Chemistry

*(Analytical Chemistry, Inorganic Chemistry, Biochemistry, Physical Chemistry, Organic Chemistry)*

- Civil Engineering
- Computer Engineering
- Electrical and Electronics Engineering
- Engineering Sciences
- Environmental Sciences
- Forestry Sciences

*(Forest Engineering, Forest Industry Engineering, Landscape Architecture)*

- Geological Engineering
- Geophysical Engineering
- Industrial Engineering
- Informatics
- Intelligent Transportation Systems

- Maritime Transportation and Management
- Mathematics
- Mechanical Engineering
- Metallurgical and Materials Engineering
- Mining Engineering
- Molecular Biology and Genetics
- Nanoscience and Nanoengineering
- Physics

*(Atomic and Molecular Physics, Nuclear Physics, Mathematical Physics, High-Energy and Plasma Physics, General Physics, Solid-State Physics)*

- Technology Transfer
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ISGRS 2018

# ORAL PRESENTATIONS

1st International Symposium on Graduate Research in Science Focus on Entrepreneurship and Innovation (ISGRS 2018)

October 4-6, 2018, İstanbul

**Topic: Astronomy and Space Sciences**

# INVESTIGATION STAGES OF ÇANAKKALE METEORITE

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## EXTENDED ABSTRACT

In this study, it is informing the general meteorites as well as the stages of the study of the Çanakkale meteorite dating to 1964 in the graduate thesis. It has not been published any laboratuvar results during the past 50 years except for the technical report which was registered as a meteorite when the Çanakkale meteorite was first discovered. With this thesis work, (1) it was succeeded total 4 international publications, one of which was SCI. (2) A large-scale meteorite research group has been established. (3) It has been established to capture meteorite network in university campuses in the scale of Turkey with TÜBİTAK 1001 project. We are given the stages with chronological order that contain the results of unpublished laboratory analyzes other than mentioned above. Furthermore, this study was supported by IU BAP (Project number: 690).

### Introduction

The purpose of this work is to give general meteorological information together with the comparative results of the study of the Çanakkale meteorite with multidisciplinary studies (mining engineering, geology, astronomy, atomic and molecular physics and chemistry).

### Materials and Methods (Design/methodology/approach)

The thin section of the mini-pieces taken from the burning shell and from the protected interior of the Çanakkale meteorite was imaged under a microscope. The element abundances of the meteorite were realized in the IU Advanced Analysis Laboratory and the Canadian laboratory by using different methods.

### Results (Findings)

Laboratory results from our country and abroad were compared. A total of 68 element concentrations were determined. Six of them ($SiO_2$, $Fe_2O_3$, Ni, Co, V ve Cu) gave significant values. It was confirmed that the meteorite falled to Çanakkale and was recognized as a "stone meteorite" class.

### Innovation (Practical implications)

The first scientific study on meteoroids in our country was started with this thesis study and the first SCI publication on the chemical composition and structure of the Çanakkale meteorite was studied on micro-Raman and FTIR spectroscopy and SEM-EDX analyzes, too.

**Keywords:** *Çanakkale meteorite, chondrite*

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## Topic: Engineering Sciences

# USABILITY OF REACTIVE RED 120 DYE ATTACHED POLY (HEMA) NANO STRUCTURES FOR ACIDIC BATING PROCESS

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### Abstract

In the present work, Reactive Red 120-attached poly (2-hydroxy ethyl methacrylate) nanopolymers (PHEMA-RR120) were synthesized as an adsorbent for the removal of the globuler proteins in bating. For this purpose, PHEMA nanopolymers were first prepared by surfactant-free emulsion polymerization. The dye ligand Reactive Red 120 was chemically attached to the PHEMA nanopolymers via a nucleophilic substitution reaction. Characterization of the PHEMA-RR120 nanopolymers was carried out by specific surface area, dry mass weight of the nanopolymer, SEM, FT-IR and Zeta Size analysis.

### Introduction

In leather production, the bating process is used to remove non-fibrillar globulin proteins such as albumin, globulin, glycoprotein and lipoprotein, which are found among the collagen fibers. If these proteins are not properly removed from the hide, the chemicals used in other processes do not penetrate into the leather and the leather has a hard and dry appearance.

### Material and Methods

In th2-hydroxyethylmethacrylate (HEMA), ethylene glycol dimethacrylate (EGDMA), poly-vinyl alcohol (PVA, Mw: 85000-130000), potassium persulfate (KPS), Reactive Red 120 (RR 120) and sodium hydroxide were supplied by Sigma (St Louis, USA). Pickled sheepskins of Turkish origin were used.

### Results

The bating process of sheep leathers was carried out separately with PHEMA-RR120 nanoparticles for an acidic protease enzyme at pH 4.5 and pH 6 and for an alkali protease enzyme at pH 8 and pH 6 to remove globular proteins from among the leather fibers. According to the results, at pH 4.5 the COD, BOD, ammonia and nitrogen values of acidic protease were respectively 9560 mg/L, 4550 mg/L, 69.1 mg/L and 3.8 mg/L, while the waste water values of PHEMA-RR120 nanoparticles were found to be respectively 9003 mg/L, 4300 mg/L, 66.8 mg/L and 3.7 mg/L.

### Innovation

The advance on previous work is that PHEMA-RR120 nanopolymer the activity of the acidic bating processes was increased more than with enzymes, globular proteins in the leather were removed more effectively by PHEMA-RR120 nanopolymer and also chromium consumption was increased by PHEMA-RR120 nanoparticles and less of the heavy metal chrome was discharged to the tanning effluent.

**Keywords:** *Nanoparticle, p(HEMA), Bating, Leather*

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