

LUTFI AGARTAN

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Date of Birth (mm/dd/yyyy) : 01/21/1989
Place of Birth : Zonguldak - Turkey

RESEARCH INTERESTS

- Production of photocatalytic ceramic nanoparticles by Sol-Gel method, and characterization of them; effect of initial composition on viscosity of the solution and gel. Effect of viscosity on crystallinity at xero-gel, morphology of powders, and photocatalytic properties.
- Materials characterization by FE-SEM, XRD, Rietveld Analysis, Rheometry, UV-Vis Spectrophotometry, Diffuse Reflector Spectroscopy.

EDUCATION

Master of Science

Photocatalytic Materials Laboratory
Department of Metallurgical and Materials Engineering,
Middle East Technical University (METU), Ankara, Turkey

Feb 2013 – Present
High Honor Student
CGPA: 3.79/4.00

Thesis Subject: Synthesis of B and Zr Co-Doped Titania Nanopowders by Sol-Gel Technique

Advisor: Prof. Dr. Abdullah Ozturk

Co-Advisor: Assoc. Prof. Dr. Jongee Park

Bachelor of Science

Department of Metallurgical and Materials Engineering
Middle East Technical University (METU), Ankara, Turkey

Sep 2008 – Jun 2012
Ranking: 14/75 (2.79/4.00)
Senior CGPA: 3.79/4.00

Senior Design Project: Transparent armor application for civilian ground vehicle

Advisors: Prof. Abdullah Öztürk, Prof. Cevdet Kaynak, Assoc. Prof. Arcan Fehmi Dericioğlu

Highlights:

- (a) Optimization of optical and ballistic properties, via MATLAB code.
- (b) Determination of the materials to be used and process to be applied, by help of weight and cost analysis

PUBLICATION/ABSTRACTS (* Presenter)

- **Agartan, L.,** Kapusuz, D., Park, J., Ozturk, A., “*Photocatalytic Properties of TiO₂ Powders Synthesised by Sol-Gel process using different Water/Ti-Precursor Ratio*” IMMC 2014, TÜYAP, Istanbul, TURKEY 11-13 September (2014) (Poster Presentation) [Submitted]

- **Agartan, L.**, Kapusuz, D., Park, J., Ozturk, A., 2013, “Effect of H₂O/TEOT Ratio on Photocatalytic Activity of Sol-Gel Derived TiO₂” *Nanomaterials and Energy*, 2, 280-287 , 2013, doi:10.1680/nme.13.00026
- **Agartan, L.***, Kapusuz, D., Park, J., Ozturk, A., “Effect of Water/Tetraethylorthotitanate Ratio on the morphology of Sol-Gel Derived TiO₂ Powder and its photocatalytic activity”; “Fabrication and Fundamentals II & Characterization and Properties” 2014 Functional Nanomaterials: Synthesis, Properties and Application Symposium of TMS 2014, San Diego, California, USA 16-20 February (2014) (Oral Presentation) [Accepted]

PEER REVIEWED CONFERENCE PROCEEDINGS

- **Agartan, L.***, Kapusuz, D., Park, J., Ozturk, A., “Photocatalytic Properties of TiO₂ Powders Synthesised by Sol-Gel process using different Water/Ti-Precursor Ratio” 17th International Metallurgy & Materials Congress [Submitted]

LANGUAGE

- Turkish : Native
- English : Fluent [TOEFL (Dec 06, 2013) 103/120, Reading: 27/30, Listening: 28/30, Speaking: 23/30, Writing: 25/30]

GRE RESULT

Quantitative Reasoning: 167 (130-170)
 Verbal Reasoning: 143 (130-170)
 Analytical Writing: 3.0 (0.0-6.0)

PROFESSIONAL EXPERIENCE

2013, June 16 - 17

Attendee

Hands-On-Training for XRF by JSPS (Japanese Society of Promotion of Science) at 2nd International Henry Moseley’s School and Workshop on X-Ray Science, ITAP (Institute of Theoretical and Applied Physics) Turunc Campus, Turunc, Marmaris, Mugla, Turkey

2013, June 13 - 22

Attendee

2nd International Henry Moseley’s School and Workshop on X-Ray Science, by ITAP (Institute of Theoretical and Applied Physics); ITAP Turunc Campus, Turunc, Marmaris, Mugla, Turkey.

2013, May 28

Attendee

“How To Publish a Scientific Journal Article” Workshop conducted by Springer and Edanz

2012, Nov - 2013, April

Project Assistant

Arc Welding of Al 5083 Alloy, Improving The Fracture Toughness

and Crack Propagation Characteristics by Friction Stir Welding,
TUBITAK (Scientific and Technological Research Council of Turkey)
Project Code: 112M238
Department of Metallurgical and Materials Engineering,
Middle East Technical University

2011, Aug 22 - Sep 23

Summer Internship

Roketsan A.Ş. Missile Industries, Department of Metal Shaping,
Elmadag, Ankara, Turkey

- A report about glass to metal sealing is prepared.
- Observation of the production and shaping stages of metal products.

2010, Oct 19–2011, Feb 20

Inspection Committee Member

Materials Science Society of METU

2010, Aug 23-2010, Sep 21

Summer Internship

Erkunt A.Ş., Department of Quality Control, Ankara, Turkey

- Whole casting process is observed from mold shaping, till the surface modification.
- Quality control parameters and procedure is observed.

2008, Oct 10-2010 Oct 19

Active Member

Materials Science Society of METU

2010, Jun 18-19

Member of Organization Crew

5th Materials Day

Cultural and Conventional Center METU, Ankara, Turkey

2009 Jun 22-23

Member of Organization Crew

4th Materials Day

Cultural and Conventional Center METU, Ankara, Turkey

2008, Oct 16-18

Attendee

14th International Metallurgical and Materials Congress TÜYAP Fair,
Convention and Congress Center, İstanbul, Turkey

PROJECTS

2013, Jan – 2014, Jan

Synthesis of B and/or Zr Doped TiO₂ Nanopowders by Sol-Gel and Solvothermal Methods, BAP-METU (Scientific Research Project), Project Code: BAP-03-08-2013-001

- *Advisor: Prof. Dr. Abdullah Ozturk*
- I produced and characterized Sol-Gel synthesized powders (FE-SEM, XRD, Rheometer, UV-Vis Spectrophotometry, Diffuse Reflector, Rietveld Refinement) .
- I prepared a report for the studies conducted in the first six months of the project.

- 2012, Nov - 2013, Apr** **Arc Welding of Al 5083 Alloy, Improving The Fracture Toughness and Crack Propagation Characteristics by Friction Stir Welding**, TUBITAK (Scientific and Technological Research Council of Turkey) Project Code: 112M238
- *Advisor: Prof. Dr. Cemil Hakan Gur*
 - Heat treatment, and micrographic preparations of as-received Al alloys.
 - Macrographic preparation of the welded parts.
- 2012, Sep- Present** **Synthesis of B and Zr Co-Doped Titania Nanopowders by Sol-Gel Technique, MS Thesis**
- *Advisors: Prof. Dr. Abdullah Ozturk, Assist. Prof. Jongee Park*
 - I produced and characterized synthesized powders (FE-SEM, XRD, Rheometer, UV-Vis Spectrophotometry, Diffuse Reflector, Rietveld Refinement).
 - I prepared a preliminary presentation (literature review and some experimental result), and 2 reports (literature review).
- 2012, Mar – 2012, Jun** **Composite Materials Project: Military Applications of Composite Materials.**
- *Advisor: Prof. Dr. Cevdet Kaynak*
 - Brief research of the materials being used, techniques being applied, and main stresses and forces acting on product are done for 6 different products (Protective Vest, Personal Bulletproof Visor, Ground Vehicle Protection, Base and Side Armours in General Purposed Helicopters, Composite Fuel Tanks for Air Vehicles, Air Inlet Duct for Air Vehicle).
 - A report about the literature research was prepared.
- 2012, Feb - 2012, Jun** **Design Project: Transparent armor application for civilian ground vehicle.**
- *Advisors: Prof. Abdullah Ozturk, Prof. Cevdet Kaynak, Assoc. Prof. Arcan, Fehmi Dericioglu*
 - Optical and ballistic parameters are optimized.
 - Cost and weight are optimized by materials to be used and processes to be applied.
 - I prepared a report, 2 posters, and 3 of the 13 presentations including the final presentation at the end of semester.
- 2011, Nov – 2012, Jan** **Failure Analysis Project. Analysis of a car chassis in terms of production, processing and coating technique used.**
- *Advisor: Prof. Dr. Bilgehan Ogel*
 - Sample is investigated in optical and electron microscope; for observation of phases. EDS is used for determination of the coating. The orientation of the grains enabled us to have idea about the processing technique applied.
 - A report and a presentation were prepared.

- 2011, Mar – 2012, Jan** **Materials Research Project: Production and Characterization of B and/or Zr Doped Photocatalytic Titanium Nanoparticles**
- *Advisor: Prof. Dr. Abdullah Ozturk*
 - Samples were synthesized by Sol-Gel, for different catalyzers (HCl, Urea).
 - For characterization: XRD, FE-SEM and UV-Vis Spectrophotometry are applied.
 - 4 reports (2 for literature review, 2 for experimental result presentation)
- 2011, Mar – 2011, May** **Materials Characterization Project. Identification of powder sample by EDS, XRD, Crystal Structure and Quantitative Analysis Techniques.**
- *Advisor: Assoc. Prof. Dr. Caner Durucan*
 - Purpose of the project was to teach us, how to analyze given XRD diffractogram and EDS graph; for determination of the elements, phases present in it; crystal structure determination of the present phases and amount of the present phases. During phase determination Hanawalt Method was used.
 - 4 reports (Chemical, Qualitative Phase, Crystal Structure, and Quantitative Phase Analysis) and a presentation was prepared.
- 2010, Dec – 2011, Jan** **Metallography Project. Identification and heat treatment of a given sample.**
- *Advisor: Assoc. Prof. Dr. Arcan Fehmi Dericioglu*
 - We were asked to determine the type of the given alloy steel, apply it a heat treatment, which will increase its yield strength to 1500 MPA, meanwhile crack must not form over the sample.
 - Grain structure before and after; also, at as-polished and as-etched conditions were photographed by optical microscopes.
 - A report was prepared and a presentation was done about the studies made.

AWARDS

- Due to being in the 10% limit in my department for two terms in a row, entitled for non-refundable grant by METU.
- Awarded two times as High Honor student in undergraduate education (GPA above 3.50/4.00)
- Lecture Performance Award, for taking all master's courses at two terms; and having the highest GPA [Application Submitted]

COMPUTER SKILLS

- Microsoft Office
- iWork '09
- C Programing (Beginner Level)
- Adobe Photoshop CC

- Origin 8
- Rigaku Qualitative Phase Analysis 4.2.
- Unitcell
- GSAS (Rietveld Refinement)
- CMPR
- CaRIne Crystallography 3.1
- DrawXtl

REFERENCES

Available upon request