

research newsletter

Eastern Mediterranean University



Biomedical Science Research
at EMU

2009/1

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Dear Colleagues,

We are happy to bring the first issue of 2009 to the EMU community. In this issue, you will observe several changes in our newsletter. Firstly, we introduce a new section titled “*Where are they now?*”, in which we feature EMU alumni and their current research careers. In this section, we aim to highlight how EMU has shaped the research interests and careers of our former students, who have gone on to pursue research in various parts of the world. We believe that each of our alumni plays a unique role in contributing to knowledge across a wider research community. Starting with this issue, we will be sharing their achievements with you.

Secondly, we have identified a common theme for all our 2009 issues. *Biomedical Science Research* at EMU will be the shared topic featured in this year’s newsletters. Biomedical Science, which studies all aspects of life, is an interdisciplinary field, joining scientists from various backgrounds. Research in the field covers a wide spectrum of topics, ranging from understanding basic cellular phenomena on molecular level to developing devices for medical applications.

In the research community across the world, great emphasis is put upon understanding the scientific phenomena about our lives and developing medical applications. Researchers, employing different investigative methods, contribute to this rapidly evolving, dynamic field. EMU’s own researchers are also contributing toward these global efforts.

Several of our scientists actively work on different aspects of Biomedical Sciences. Some of the subjects worked on by EMU researchers include biomaterials, design of biomedical instrumentation, and computational molecular biology. Our researchers coming from various disciplines and their graduate students devote their time and efforts toward exploring certain biological phenomena. Our aim as the newsletter team is to bring forward these research projects which contribute to this rapidly developing field of science, and more specifically to encourage further collaborations and development in the field at EMU. In this regard, we begin with chemist Elvan Yılmaz, who introduces her work on modified chitins and chitosans for biomedical applications.

As with our former issues, we continue to present multiple facets of the EMU research community. In this issue, Matthew Harpster writes about his research on maritime archaeology in Northern Cyprus. Gökhan İskifoğlu shares his Ph.D. studies on globalization, education and critical thinking. In our Interview section, we feature Ayfer Şen, a Ph.D. student in the Department of English Language Teaching, who discusses how she balances life as an instructor and as a graduate student.

Last but not least, we proudly announce that Jim Kusch has joined our team as an associate editor. With Jim’s participation, we plan to develop new ways of sharing research information across and beyond our campus.

We thank all those who have contributed and hope that you enjoy reading this issue.

With best regards,

Bahar Taneri

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Research @ EMU

■ TÜBİTAK Research Projects

An agreement titled “Cooperation Protocol Regarding the Support for T.R.N.C. Universities’ Scientific and Technological Research and Development Projects by the Republic of Turkey” has been signed by the governments of the Republic of Turkey and T.R.N.C. This protocol allows the academic staff working in T.R.N.C. to apply for project funding within the frame of “Support Program for Science and Technology Research Projects” regulated by The Scientific and Technological Research Council of Turkey (TÜBİTAK). Project applications are to be made in accordance with the application calendar specified for 1001 Scientific and Technologic Research Projects of TÜBİTAK. Duration of the projects supported by this program for Science and Technology Research Projects is limited at most to 36 months. For the year 2009, the upper limit of research projects is 120,000 TL, and the deadline for 2009 applications is 4 September 2009. EMU researchers are encouraged to apply to this program. More information about Support Program for Science and Technology Research Projects could be obtained at <http://research.emu.edu.tr>

News submitted by: *Ayhan Bilsel*

Research Advisory Board Chair

■ Frontiers in Science Education Research (FISER 09)

The first international Frontiers in Science Education Research (FISER09) conference was held at Salamis Bay Conti Hotel between 22-24 March 2009. Keynote speakers of FISER09,



David Hestenes

Arizona State University, USA

work about the need of a radical change in science and mathematics education in a rapidly changing global economy. Following Hestenes, the second keynote speaker Cedric Linder

(Arizona State University, USA), Cedric Linder (University of Uppsala, Sweden), and Lillian McDermott (University of Washington, USA) are regarded as the frontiers of science and mathematics education research. The first keynote speaker of the conference, David Hestenes introduced his



Cedric Linder

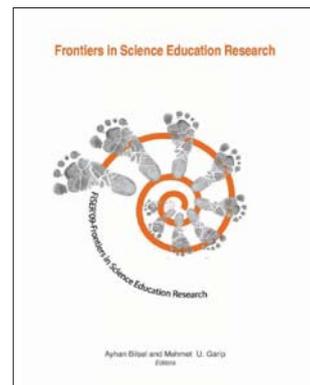
University of Uppsala, Sweden

presented examples from physics education. Due to their pioneering academic success within the field, the keynote speakers were the highlights of the conference. FISER09 also provided an active platform, where the frontiers and the participants met each other and shared their research in science and mathematics education. FISER09 was truly an international event with over one hundred participants from twenty five different countries. Participants also had the chance to be exposed to the culture of North Cyprus via the social events arranged by the organizing committee. The proceedings of FISER09, edited by Ayhan Bilsel and Mehmet Garip of Faculty of Arts & Sciences, has been published by the EMU Press. Those who are interested in obtaining a copy should contact the editors.



Lillian McDermott

University of Washington, USA

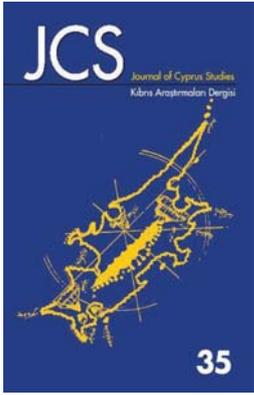


Proceedings of FISER09

News submitted by: *FISER 09 Organizing Committee*

■ Journal of Cyprus Studies

The divided status of Cyprus has been evidently exerting impact beyond the borders of the island for some time. Over the decades of stalemate, it has grown into a major force affecting not only the well-being of the Turkish and Greek Cypriots, but also the Turkish foreign policy, the EU’s civic capabilities, Turkey-EU relations, European Mediterranean Policy and the future of transatlantic security. The latest issue of the *Journal of Cyprus Studies* (JCS), prepared by the guest editor C. Akça Ataç, seeks to display how influential the Cyprus question still is in the current course of international affairs. The articles of this



volume dwell on the resonances of attempts to reconcile the two Cypriot communities. The main focus rests on the decisive role that the Cyprus problem plays in Turkey's EU candidature in particular, and the EU's enlargement, neighbourhood, Mediterranean, security, and defence policies in general. This of JCS issue accommodates the following articles: *The EU Conditionality in the Cyprus Problem: Catalyzing Euro-Scepticism in Turkey?* by S. Barış Gülmez and M. Didem Buhari-Gülmez; *Turkey's EU Candidacy Process and Prospects for Democratic Settlement of the Cyprus Issue* by Petek Karatekelioğlu and Volkan İpek; *EU's Capacity of Creating Desirable Outcomes: Cyprus, Georgia, Central Asia, and Some Other Matters of Normative Leadership* by Akça Ataç; *The New Parameters of Security and Cooperation in the Mediterranean: The European Union's Mediterranean Initiatives and Implications for Cyprus* by Emel G. Oktay and Yiğit Uçak. In addition to these articles, this issue comprises Sinan Ülgen's discussion paper titled *The Evolving EU, NATO, and Turkey Relationship: Cyprus Impasse and Implications for Transatlantic Security* and a book review by Nur Köprülü on *Mesut Özcan's Harmonizing Foreign Policy: Turkey, the EU and the Middle East*. The current issue of JCS and previous issues are available for purchase at EMU bookstore.

News submitted by: Ülker Vancı Osam
Director of Center for Cyprus Studies

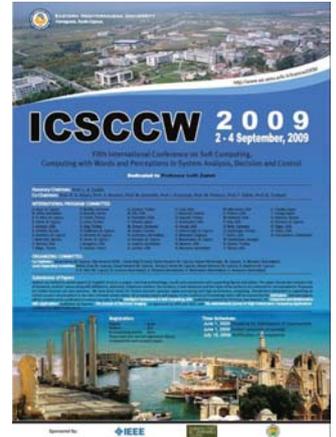
Upcoming Research Events

■ 5th International Conference on Soft Computing, Computing with Words and Perceptions in System Analysis, Decision and Control

EMU is hosting the 5th International Conference on Soft Computing, Computing with Words and Perceptions in System Analysis, Decision and Control (ICSCCW 2009). The conference is going to be a meeting platform for researchers to discuss the recent developments in the field of Soft Computing (SC) and Computing with Words (CW) and Perceptions. A wide scope of topics will be offered for the participants. ICSC-

CW 2009 will cover subjects like SC Theory and Technology, Hybrid Soft Computing Systems, SC and Agents Technology, Fuzzy Reasoning with Words, Word-based Knowledge Representation, Description and Manipulation of Perceptions. Applications of SC and CW in System Analysis; Decision Sciences; Advanced Neuro and Fuzzy Paradigms; Evolutionary Computation; Telecommunications; Signal Processing; High Performance Computing; Audio, Image and Video Processing; Image and Signal Compression; Image Forensics and Security; and Pattern Recognition are among the listed topics of the conference. The conference will be held between 2 - 4 September 2009 at Salamis Bay Conti Hotel, Famagusta. The deadline for manuscript submission is 1 June 2009. Further information on ICSCCW 2009 could be obtained via <http://www.ee.emu.edu.tr/icsc-cw2009>.

News submitted by: ICSCCW 09 Organizing Committee

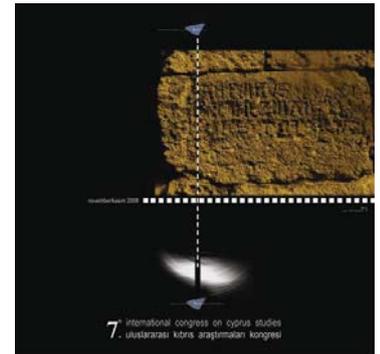


■ An International Congress on Cyprus Studies

The Center for Cyprus Studies is organizing its 7th International Congress. The event will take place between 4-6 November, 2009, during which the researchers from various disciplines coming from different parts of the world will have the opportunity to exchange their research findings and scholarly ideas. Similar to the previous six congresses, this congress is also

welcoming proposals from a wide spectrum of fields, such as politics, history, archeology, geography, language, literature, education, art, folklore, law, economy, and tourism, all related to Cyprus. The presenters will deliver their papers either in Turkish or in English, the two official languages of the congress. The qualified papers submitted at the congress will be published in the proceedings. The Center is proud to contribute to the university publications with around 25 books and the 35th issue of the Journal of Cyprus Studies. Further information about the 7th International Congress on Cyprus Studies can be obtained at <http://www.cyprusstudies.org/index.html>

News submitted by: Ülker Vancı Osam
Director of Center for Cyprus Studies



Modified Chitins and Chitosans for Biomedical Applications

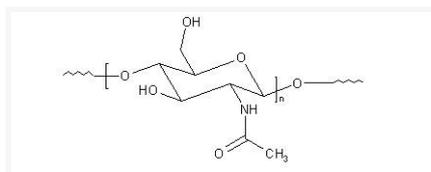
By Elvan Yılmaz
Department of Chemistry
Faculty of Arts and Sciences



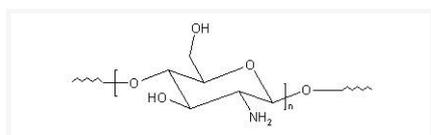
Elvan Yılmaz

Chitin, the second most abundant polysaccharide found in nature after cellulose, originates from the outer shells of crustaceans such as crabs and shrimps. These shells contain 20-50% chitin on a dry weight basis. Crab and shrimp waste from seafood processing industries provide a huge source for raw chitin. Chitin is also found in other marine animals such as krill, crayfish, clams, oysters, jellyfish, as well as in insects, algae and fungi. Chitin is a highly crystalline polysaccharide intractable in nature.

Dissolution and processing can only be achieved in unusual solvent systems like dimethylacetamide containing 5% lithium chloride. Chitosan is the deacetylated form of chitin (Figure 1). In contrast to chitin, chitosan is soluble in dilute acid solutions but insoluble in organic media. Physical and biological properties of these polymers depend strongly on the molecular weight and the degree of deacetylation.



Chitin



Chitosan

Figure 1. Chitin and Chitosan

While biocompatibility, biodegradability, and physicochemical functionality are features of chitin and chitosan that make them useful as biomedical polymers, their main disadvantage is their limited solubility, which hinders the processability and applicability. Appropriate chemical modification is a powerful tool to expand the chemical functionality, to improve the physical properties, to

enlarge and enhance the biological properties.

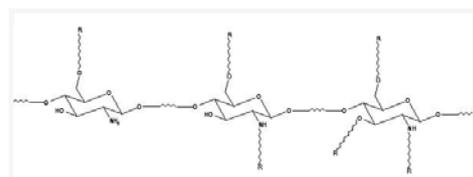
Grafting is a versatile method for polymer modification. It is possible to graft both small molecules and longer oligomer or polymer chains on a given polymer backbone. Redox initiated graft copolymerization proved to be useful in chitin and chitosan modification. Products with improved chemical and physical properties could be obtained with comparable biocompatibility, biodegradability and cationic character to the parent polymers, namely chitin and chitosan. Grafting offers a great advantage to synthesize new, modified chitins and chitosans with tailored properties as physicochemical and biological properties can be controlled by the degree of grafting.

We achieved grafting onto chitin and chitosan in respective appropriate solutions of the polymers. We added the monomer and the initiator and carried out the reaction out at constant temperature in a temperature range of 40–80°C stirring at 50 rpm and under inert atmosphere. We precipitated the grafted product in acetone or in basic solution, washed and extracted in appropriate solvents extensively to remove any homopolymer formed and any residual initiator, monomer or side products formed. The product was dried at 60°C under vacuum.

We characterized the products for their chemical functionalities by Fourier Transform Infra-red Spectrometry (FTIR), for their thermal properties by Differential Scanning Calorimetry (DSC), and for the degree of crystallinity by X-ray Diffraction Spectrometry (XRD). We carried out the dissolution and swelling tests in aqueous solution. In addition, we determined their antibacterial activity by the standard disc-agar diffusion method. Biocompatibility tests were

made by following standard ASTM and ISO methods. Percent grafting (%G) values are calculated by simple gravimetric analysis.

Vinyl polymers grafted onto chitin and chitosan by our group are poly(4-vinylpyridine) (Caner *et al.*, 1998; Caner, 2002), poly(N-vinyl imidazole) (Caner, 2002; Caner *et al.*, 2007), poly(maleic acid) (Hasipoglu *et al.*, 2005) and poly(itaconic acid) (Hasipoglu, 2002) polymethacrylates (Yilmaz *et al.*, 2007; Adali 2007; Adali & Yilmaz, 2009) as shown in Figure 2.



R =		
		4VP
		NVI
		MA
		IA
		EGDMA
		TriEGDMA

Figure 2. Grafting onto Chitosan

Here I will detail each graft and its properties. Poly(4-vinylpyridine), P4VP, is a vinyl polymer with a tertiary

amine side group. The pyridine ring in its structure is a functional group with complex forming ability. Poly(pyridines) are polycations that exhibit pH-responsive swelling behaviour, and antibacterial properties in addition to their metal ion adsorption capacity. Synthesis and characterization of chitosan-g-poly(4-vinylpyridine) polymers was first reported by our group (Caner *et al.*, 1998) which was followed by other reports (Elkholy *et al.*, 2005). Chitosan-g-poly(4-vinylpyridine) polymers exhibited enhanced antibacterial properties against *P. aeruginosa*, *E. coli*, *B. subtilis*, *S. aureus* when compared to chitosan. For example, chitosan-g-poly(4-vinylpyridine) sample with a grafting yield of 138% inhibited the growth of *S. aureus* within a 17±0.6 mm diameter zone while chitosan was effective only within a diameter of 10±0.0 mm against the same species. This value increased to 21±0.6 mm when a chitosan-g-poly(4-vinylpyridine) sample with a higher grafting value (297%) was used as the antibacterial agent.

These polymers have a potential to be applied in the field of bacteria resistant textiles to microbial filters and other biomedical devices.

Poly(N-vinylimidazole), PNVI, is a versatile polymer for biomedical applications since it is known for its biocompatibility and biodegradability. It has metal binding and antibacterial properties similar to P4VP. One advantage of PNVI is that it is a water soluble polymer. Hence, grafting of



Figure 3. Formation of chitin-g-poly(4-vinylpyridine) beads in ethanol

PNVI onto chitosan offers a possibility to increase the water solubility of chitosan. Chitosan-g-PNVI polymers synthesized in our laboratory proved to act as antibacterial agents against *P. aeruginosa*, *E. coli*, *B. subtilis*, *S. aureus*. Results similar to those of chitosan-g-poly(4-vinylpyridine) samples were obtained. Antibacterial activity against *S. aureus* increased from 14±0.4 mm inhibition zone to 16±0.6 mm, when the amount of grafted PNVI increased from 82.5% to 145%.

Poly(maleic acid), PMA, maleic acid and itaconic acid are monomers with carboxylic acid functionalities. Chitosan-g-maleic acid graft copolymers that we have designed, exhibited pH responsive swelling behaviour acting as polyampholytes. PMA grafted chitosan sample with a grafting value of 105% swelled in both acidic and basic media. The equilibrium swelling ratios were 6.4, 1.9 and 4.0 at pH values of 3.0, 7.0 and 12 respectively. Chitosan-g-poly(itaconic acid) products were highly insoluble due to the complex formation between amine and carboxylate groups. Chitosan-g-maleic acid exhibited antibacterial properties and chitosan inhibited growth of *P. aeruginosa*, *E. coli*, and *B. subtilis*.

In a separate set up experiments, we grafted polymethacrylates, poly(EGDMA), poly(triEGDMA), poly(HEMA) and their copolymers onto chitosan. These grafts exhibited grafting dependent solubility, and swelling behaviour. One product with grafting percentage of 871% was tested for its biocompatibility. It was found to be noncytotoxic. It did not induce any sensitization, irritation or acute system toxicity in the test animals but it was haemolytic i.e not blood compatible. This kind of material is suitable to be used in external intervention devices on bone and other tissues (Adali,

2009). The products were found to be enzymatically degradable as well.

As I have stated earlier, chitin and chitosan grafts prove to be useful in biomedical applications. Chitin and chitosan grafted polymers have been found to be potential new antibacterial agents, biological metal chelators, hypocholesterolemic agents, drug and gene delivery systems. Here I summarize the biomedical applications of the grafted chitins and chitosans in Table 1.

Table 1. Chitosan-based Graft Copolymers (Grafting Conditions: 70°C, CAN initiator, aqueous solution).

Product	%Gmax	Properties
Chitosan-g-P4VP	331%	Antibacterial agent
Chitin-g-P4VP	226%	Cholesterol and Fe ³⁺ adsorbent, controlled drug release
Chitosan-g-MA	105%	Polyampholyte, Antibacterial agent
Chitosan-g-PNVI	140%	Antibacterial agent, potential drug delivery system, and gene delivery vector
Chitosan-g-PEGDMA	871%	Enzymatically degradable, Noncytotoxic, hemolytic

Currently, we are undertaking several research projects in the Polymer Chemistry Research Laboratory of the EMU Department of Chemistry. Research is focused on the preparation, characterization and biomedical applications of grafted chitin and

grafted chitosan based biomaterials. For example, as part of his Ph.D. thesis work, Hasan Oylum is working with me for preparing and characterizing the chitin-g-poly(4-vinylpyridine) gels. In this work, grafted chitin beads are prepared with metal and cholesterol adsorption properties. Initial tests on drug encapsulation into these beads proved to be successful and controlled drug release was achieved. Figure 3 shows chitosan-g-poly(4-vinylpyridine) beads formed. Zülal Yalınca is working with me on the preparation and characterization of chitosan-g-poly(N-vinylimidazole) based gene delivery vectors under the co-supervision of Bahar Taneri and in collaboration with Hasan Uludağ from the University of Alberta-Canada. Zülal is investigating physical gels of chitosan-g-PNVI as controlled drug release agents as well. Samaneh Saber is currently working on grafting of poly(N-vinylimidazole) onto chitosan by UV-initiation under the supervision of Osman Yılmaz. Hande Erarslan is investigating synthesis and characterization of polyphosphate modified chitosans in her M.S. thesis work supervised by Osman Yılmaz.

Acknowledgements:

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About the Researcher

Elvan Yilmaz received her B.S., M.S., and Ph.D. degrees in Chemistry from the Middle East Technical University in Ankara, Turkey. She joined Eastern Mediterranean University in 1991 as an Assistant Professor. She became an Associate Professor in 1996 and Professor in 2003. She has supervised and co-supervised several Ph.D. and M.S. theses. In collaboration with her colleagues and graduate students, she has been carrying out research focused on the preparation and characterization of chitin and chitosan based modified polymer systems for biomedical and environmental applications. She is also interested in sol-gel glass preparation and characterization. She has been serving as a member of the Research Advisory Board since 2005. She is the EMU representative for the Republic of Turkey/TRNC funded Scientific Research Projects Evaluation Commission. Yilmaz has been the Acting Director of the EMU Institute of Graduate Studies and Research since 2007. For more information about this research project, please contact our researcher at elvan.yilmaz@emu.edu.tr.

Maritime Archaeology in Northern Cyprus

By Matthew Harpster
Department of Archaeology and Art History
Faculty of Arts and Sciences



Matthew Harpster

When I arrived at Eastern Mediterranean University in the Fall of 2006, I encountered a community with a great deal of potential, particularly in my field of maritime archaeology. My graduate training occurred primarily in the Institute of Nautical Archaeology (INA) at Texas A&M University, an institute that specializes in maritime archaeological research in the Mediterranean and, particularly, had its start in Kyrenia back in 1973. INA now has headquarters in Bodrum, Turkey, and in Texas, and they maintain strong ties with the Mediterranean. My education in INA continually stressed the potential of maritime archaeological research to reveal more about seafaring practices in the Mediterranean.

Northern Cyprus therefore, meant a unique opportunity to me. Here was an island that had been integral to Mediterranean trade and seafaring for millennia. Upon arrival, however, I realized that maritime archaeology means much more than gathering SCUBA equipment, cameras and tape measures and finding things under water. Simply enough, because archaeology studies a community's past, archaeological activity needs the community as well. My research at EMU, as a result, has been character-

ized by my attempts to document the maritime heritage along the northern Cypriot coastline and my efforts to enhance local capacity to protect and study this cultural resource.

The best way of integrating the public, I knew, was to implement a program that had been active in the United Kingdom for at least 20 years: the Nautical Archaeology Society (NAS). This group emerged in 1983 after the monumental excavation of King Henry VIII's warship, *Mary Rose*, as a means of increasing the public's awareness and understanding of the importance of their maritime heritage. The NAS training program, which has five levels, proposes that by entrusting the public with certain skills and information, the public would feel responsible for their own history and would take an active role in protecting it. So, in the fall of 2006, I began working with the NAS to develop a custom program for Cyprus; a year later, the program was finished and the very first class of four participants earned their certificates. I have taught the course twice more, gathering more and more participants each time. The most recent class, for example, had 12 people from both communities on the island, making this NAS program the first bi-communal program in Cyprus

actively protecting the maritime heritage on both sides of the border (Harpster, 2008).

As another means of enhancing local capacity, I worked with colleagues at INA in Bodrum to develop an internship specifically for Turkish-Cypriot archaeology students. There is a widespread need for individuals with the ability to stabilize and conserve artifacts recovered from the sea floor, particularly if excavations begin again. The very first student to participate, Pembe Özen, spent six weeks at INA headquarters in Bodrum in the Spring of 2008 learning how to preserve organic and inorganic materials hundreds or thousands of years old, and developing skills that are currently being enhanced in her graduate training at the University of Lincoln in the United Kingdom. Hüseyin Aydınli's four-week internship in the Fall of 2008, in which he learned similar skills, was kindly sponsored by Oğuz Can, who recognized Hüseyin's potential and the need to develop these skills to protect both the future and the past of the Turkish-Cypriot community. As this internship and the NAS training continue into the future, I am confident that each program will have a positive impact on the protection and management of maritime cul-

tural heritage along the Turkish-Cypriot coastline.

As I said, however, I arrived on Cyprus to work underwater, and I've had the good fortune to do that as well. Working under the permit granted to Uwe Müller, who also teaches archaeology at EMU, and Martin Bartelheim at the University of Tübingen, Germany, I've begun directing a series of maritime heritage assessment surveys along the southern coastline of the Karpaz peninsula. A key goal of these surveys is similar to a goal of the NAS training – enhancing the local resources to protect the maritime heritage of northern Cyprus. Turkish Republic of Northern Cyprus Department of Antiquities, under the direction of Fuat Azimli, is in charge of protecting all the antiquities in northern Cyprus above and below the water. Essential to their efforts, therefore, is raw data; they need to know what artifacts are where, and how many there are. The NAS program

aids the efforts of the Department of Antiquities by training the diving community to protect and report what maritime cultural heritage they may encounter underwater, and my surveys play a similar role. By conducting a series of systematic surveys in the region of Kale Burnu / Kral Tepesi, and by documenting and mapping every artifact found underwater, we are slowly creating a comprehensive artifact density map of maritime cultural heritage along part of the Karpaz peninsula. The basic data we gather is reported to the Department of Antiquities and they, as a result, are better able to manage and protect this material. Undoubtedly, our work only surveys a small portion of the entire coastline of northern Cyprus, but it nevertheless represents an important first step.

What is important to stress, however, is that archaeology is always a team effort, and I have had much welcome help while embarking on these

projects. In addition to support and supervision from Fuat Azimli and his staff at the Department of Antiquities, Tuncay Sadıkoğlu has been a friend and continual source of support in ways great and small, and I know that the NAS training program and the coastal surveys would not have happened without his generosity. Similarly, without the help of the hard-working and skillful team of Hüseyin Aydın, Hasan İstillozlu, Sevil Peker and Michaela Reinfeld in the summer of 2008, we never would have found anything underwater; I would have been sitting on a beach by myself.

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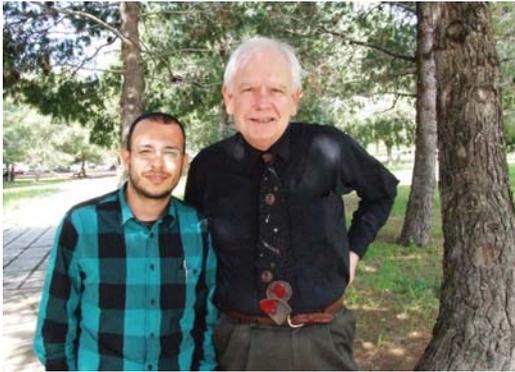
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About the Researcher

Matthew Benjamin Harpster obtained his B.A. in Classical Archaeology and Anthropology in 1994 at The George Washington University, USA. He, then, pursued his academic career by receiving M.Phil in Maritime Studies in 1997 at the University of St. Andrews, Scotland. In 2005, Harpster obtained his Ph.D. in Anthropology at Texas A&M University, USA. During his Ph.D. studies he particularly studied the construction of the 9th century ship from Bozburun, Turkey. Prior to joining to EMU Department of Archaeology and Art History, Harpster worked as an instructor at the Department of Anthropology in Texas A&M University between 2001 and 2003, and at Dibner Institute for the History of Science and Technology as a Postdoctoral Fellow in 2005. He has been teaching at EMU since 2006 as an Assistant Professor of Archaeology. For more information about this research project, please contact our researcher at matthew.harpster@emu.edu.tr.

Globalization, Education, and Critical Thinking: Why do we need a paradigm shift in Education?

By Gökhan İskifoğlu
Department of Education Sciences
Faculty of Education



Gökhan İskifoğlu with his supervisor Jim Kusch

The phrase ‘critical thinking (CT)’ is very frequently uttered these days both in North Cyprus and in Turkey. For the last five years, most of the teachers engaged themselves in trying to understand what critical thinking actually means, why it is so important, or whether it is directly related to or affecting the education that they provide, how they can embed critical thinking into the educational programs or help their students to engage in critical thinking, whether critical thinking is a product or process laden issue, and many others. Although these questions are not new, it is interesting that these questions need to be answered one more time within the Turkish educational context. It seems that there is a need for an educational reform both in Turkey and in North Cyprus. But, do we really need a paradigm shift in education in order to cope with the demands of the 21st century, and if it is really needed, how can we bring an appropriate change into being? In order to provide comprehensible answers to these intriguing questions, we prefer to elaborate on the issue from the point of globalization,

education and the need for critical thinking as well as their interrelationship.

Critical thinking is internationally considered to be the essence of education in the 21st century (Freire, 2005; Geertsen, 2003; Grauerholz & Holtrop, 2003; Hager & Kaye, 1991; Prior, 2000). There are many reasons for scholars and researchers to give great emphasis on critical thinking. But there is one reason that seems to be more important than others and that is globalization. And yet, very few researchers have so far mentioned the strong bond between globalization and education, and little research proposes a way that ensures that globalization may not literally wipe away the educational conventions of societies.

At the first glance, one may not see the intense relationship between globalization, education, and the need for critical thinking. A closer look at these concepts under careful considerations of their influences on one another reveals an important link. Together with my Ph.D. supervisor Jim Kusch, I begin by unpacking the link between globalization and education to give some examples.

Whenever teachers or school administrators find a sponsor for their school’s football team, whenever they order books via the Internet or use books that are printed in other countries, whenever they build a fence around their schools, or whenever they join a student exchange program, they are contributing to the process of globalization in its fullest sense (Smith, 2002). If these examples indicate a direct relationship between globalization and education, then the question is: what then is the indirect relationship? In order to provide a deeper understanding, we find it essential to concentrate on the concept of globalization first.

All around the world, changes happen in the societies, and the common element of these changes is “the international integration of goods, services, and capital” (Rodrik, 2000). Such process of integration is called globalization and those changes are “pressuring societies to alter their practices” (Rodrik, 2000). As a result, people tend to develop new perspectives, new attitudes, and new ways of life accordingly; regardless of the type of change they experience. For this very reason, such economic happenings directly affect the way people organize and live their lives. The question is, what is the direct or indirect relationship, if any, between economics and education? Undeniably teachers are the key players who need to be aware of the changes in their societies (Counts, 1987). However, when teachers encounter the challenge of globalization, what should their attitudes be?

Because of globalization, “the services of large segments of the working population can be more easily substituted by the services of other people across national

boundaries” (Rodrik, 2000). This leads people to keep changing their locations; likewise, Rodrik sees globalization as one of the main causes of all social alterations and diversities. Rodrik also contends that continual mobility and change produces diverse societies, with members coming from different countries of the world, bringing diverse attitudes and diverse ideas with them. Such whirl of diversity equals a diverse culture, in which many different consumption habits are formed or adopted, and different points of views are raised within the same society. Therefore, teachers are bound to deal with diverse populations in this globalizing world, and the teachers’ sensitivities as well as their dispositions toward such issues are important (Lau, 1992; Melnick & Zeichner, 1998).

With this background information about globalization in mind, our discussion moves to the relationship between society and education, since globalization is able to reach the educational institutions through the screen of society. If the relationship between economics and society can be called intense, the relationship between education and society can be called intimate. As Ottaway (1998) suggests, education “is an activity which goes on in a society, and within its aims and methods there seems a relation within the nature of the society in which it takes place” (p. 1). In other words, the location, the language, and other characteristics of a society shape the education provided in that particular society. So, it is very natural that different societies are inclined to provide different kinds of education (Ottaway). We are arguing here that on the whole, education is a social process that is profoundly influenced by forces of globalization. One of the main queries of education, however, is to decide on which traits and attitudes of the society ought to be passed on to the following generations. Within that query are subsumed deeper questions about the purpose of education in a broad sense. Cultural transformation is the answer to that question. In addition, Ottaway, defines culture as the “total way of life of a society” and education as the transmis-

sion of culture (p. 8). For that matter, education is expected to provide students with opportunities to let them get everything that is part of their culture. In this respect, one other point is that culture causes the differences among the societies, where globalization is the reason for the diversities within the societies. There is such an irony here that globalization causes these diversities by enabling different people to come together in the same place. Remember once more, this research considers education to be the way that collective experiences of societies are passed on to following generations. What is important here is to realize the fact that teachers need to be aware of the extent that they are influential in shaping the attitudes of the individuals, and in defining the attitudes of future citizens and members of the future society. Ottaway goes so far as to say that, “... if only the young were brought up differently then we could within a generation produce an outlook that could transform the world. There is a limit to what education can do, and the limit depends partly on ourselves as instructors” (p. 197).

Since the relationship between education and society is so close, teachers should somehow be aware of the issues currently shaping societies; still, education and economics remain at the center of everything. Economics keep causing the changes in the societies and education is shaped by these changes in the society. This research finds that education must be affected by globalization, because globalization has direct effects on societies in which education is embedded. In this respect, Mark Smith (2002), in *Globalization and the Incorporation of Education*, provides a very well prepared and clear explanation of how globalization seized the arena of education. According to Smith, “forces associated with globalization have conditioned the context in which teachers operate, and profoundly altered people’s experiences of education” (p. 2).

First, Smith explains how education has been commodified, and taken over by trans-national corporations.

Commodification causes people to see education as a good to be consumed so that education becomes a commodity for people, rather than a social or personal need. Most enroll in a university program according to the requirements in the labor market. This causes people to decide on which program to be educated by considering whether they will have a chance in the labor market to have job, and whether the payment of this job will be satisfactory for them. Although Smith does not say that he sees this shift as a negative one, what he implies is that such a change in people’s perceptions of education is affecting the practice of education.

Second, Smith (2002) mentions advancements in educational technologies as another branch of reflections of globalization on education. Though they are not openly visible, the ideas of life-long learning, individualized learning, distance education, web-based learning all carry the finger-prints of globalization. All of these activities are promoted as part of individualized programs, and in a de-localized way. As long as people keep on going to their “study tours, fitness centers” and buy their “self-instruction manuals, electronic networks”, they will give way to transnational corporations to keep their hands on education (Smith, 2002).

Finally, Giroux (2002) indicates, “it is time to recognize that the true tutors of our children are not school instructors or university professors but filmmakers, advertising executives and pop culture purveyors” (Smith, 2002). This sentence completes the last piece of jigsaw puzzle of globalization in education. In this view, it is not difficult to see how schools are becoming dysfunctional to some extent, and how teachers can no longer be as influential as they once were, in helping children experience intellectual transformation. The problematic point is that the schools are now in a position where they are stuck between their educationally designed aims and programs of their own, and the commercial desires of the transnational corporations, who have the money in their hand, needed for the

realization of the educational practices.

As all these alterations that globalization causes in education are discussed, the role of teachers in shaping the attitudes of the societies must be re-considered. Whether they work for a private school, or a state school, it is still commonly agreed that teachers have great role in the developmental process of youngsters.

Consideration of the important relationship between globalization, society, and education as well as their influence on one another leads to consider a paradigm shift in education in order to protect generations from the danger that globalization may wipe away the educational conventions of societies. So, we think, the first remark to make about this issue is to be aware of the fact that the current paradigm in Turkish educational system must be changed substantively. For instance, a conception of education, which is to transfer knowledge to the next generations and shape the attitudes of individuals in a given educational context, which refers to end product or if you wish objective reality needs to be changed to a more constructivist, subjectivist, and process laden educational paradigm; therefore, schools become more powerful institutions where students find opportunities to engage in critical thinking and practice to form their own ideas by means synthesizing, analyzing, interpreting, discussing, and reflecting upon their own ideas. Such

qualities in thinking would help the members of the society to realize the implicit effects of globalization on societies and education. How can we bring such a change into being is the question that needs to be answered. I propose to begin with reforms in teacher education programs. Lau (1992) supports our view by indicating, "... students' performance in thinking will not improve much if the quality of teaching is not much improved. And teaching will not improve much without dramatic improvements in the field of instructor education" (p. 1).

Accordingly, it seems a fact that any expected improvement in any society needs the same improvement in teacher education. Therefore, if we seek a paradigm shift in society and in the way people think, then, we should also seek a change in teacher education programs.

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About the Researchers

Jim Kusch has been teaching at EMU Department of Educational Sciences since 2006 and also serves as coordinator with the EMU Quality Assurance Initiative. He has taught Qualitative Research Methods for ten years and is an active researcher in areas of intercultural dialogue and globalization. For more information about this research project please contact our researcher at jim.kusch@emu.edu.tr.

Gökhan İskifoğlu obtained his M.Ed. degree in 2005 from EMU, department of Educational Sciences, on Qualitative Ethnographic Research Paradigm. His M.Ed. thesis was entitled "Aggressive and disliked: An ethnographic exploration into the social-worlds of socially-rejected Turkish Cypriot children in a primary school setting". He is now pursuing his Ph.D. degree in the same department and is mainly interested in gaining deeper understanding of embedding critical thinking in teacher education programs and assessing those programs in terms of critical thinking disposition. For more information about this research project please contact our researcher at gokhan.iskifoglu@emu.edu.tr.



Ayfer Şen

Ayfer Şen, a Ph.D. student at the English Language Teaching Department, has also been an instructor at EMU since 1995. We asked her how she balances her life both as an instructor and as a graduate student.

- **When did you start your studies at EMU? What were your initial thoughts and ideas when you first started your Ph.D. studies?**

In Spring 2000-2001 I decided to apply to the Ph.D. program in English Language Teaching Department and I felt privileged to start this program due to the quality of the teaching staff and students in the program.

- **Could you tell us about your educational background before you started your Ph.D. degree.**

I studied in English Language and Literature department at EMU and immediately after graduation in 1995, I started working at English Preparatory School (EPS) and attended various certificate programs specific to language teaching. Since I was a graduate of EMU, I felt the necessity to do my M.A. study outside my institution, and therefore, I started to look for opportunities in other countries. In 1998, I was accepted to MATEFL Program at Bilkent University in Ankara, Turkey. It is a unique program where English language teachers from various universities come together and complete the one year program sponsored by Bilkent University, Fulbright Commission and the universities that these teachers work for. Owing this opportunity to EMU, I wanted to work on something which was needed here. So, following Gülşen Musayeva's suggestion as the head of EPS in those years, I did my M.A. study on the evaluation of the self-study centers at EPS. And upon my return, I started working with a team responsible for the improvement of these centers.

- **Could you introduce your graduate study subject for our readers?**

I have designed a model English course for freshmen taking their needs in language and study skills into account. I have collected the data from students and their subject matter and language teachers through questionnaires, interviews and observations. The results have indicated that our students face various difficulties in productive skills -speaking and writing. Moreover, certain study skills like working in pairs and groups, taking part in class discussions, doing research on the Internet and using the collected data appropriately in their assignments, making a summary, etc. also needed improvement. Using all the collected data, I have designed the GEED 142: Academic Speech course and I have been offering this course since Spring 2007 within the General Education Department.

- **Why did you choose this topic of study? What motivated you?**

While choosing the topic of my Ph.D. study I had two motives: the first one was to choose a topic which would enable me to work on an area that would contribute to my professional development and the second motive was to create something that would be actually used in the classroom. In other words, I wanted to find the answers of many questions that I have encountered for so many years as an English language teacher and wanted to use my Ph.D. study as a medium for this.

- **Why did you choose EMU for your graduate studies?**

As I have already pointed out, I wanted to study in an area which was going to enable me to work with my students. In other words, I wanted to serve my institution and cater for the needs of the students studying at EMU.

- **You are both an instructor and a Ph.D. Student at the same time. Could you tell us a bit about how you balance your work? And also how does it feel to be both a graduate student and an instructor at the same time?**

I always knew that it was going to be a demanding task but I could not stop myself from taking on these challenges. To be honest, I cannot say that there is a fair balance as I keep finding myself focusing on teaching related issues during day time. Especially since Spring 2008, when I volunteered to be the Assistant Chair of General Education responsible for lan-

guage courses, I could hardly find time for my thesis even after school hours. However, I try my best to focus on my thesis study in order to finish it within the specified time limit of the program. Despite the difficulties, I can still say if I were asked again, I would act in the same way. As I said before, it is my choice and I wanted it to be in this way. Of course it is difficult to have different roles in the same institution as a student, a researcher, an instructor or an administrator but I have to admit that it is the reality of being at a university and you should never lose the spirit of being a learner. To tell you the truth, I am benefiting a lot from this experience.

■ **Would you recommend a similar experience to other graduate students?**

Well, different disciplines require different approaches and attitudes but as a language teacher, I strongly believe that theory and practice should support each other. And if they want to be both the researcher and the participant of their study as in action research studies, it is inevitable for them to go through the same path.

■ **How would you say EMU has made a difference in your life?**

I owe a lot to EMU. Especially during my undergraduate studies in English Language and Literature Department and in my first year of teaching at EPS, I learned a lot and gained invaluable experience which made me who I am today. When I was an undergraduate student, I always felt privileged because we had many instructors from different countries with different backgrounds. And when I was a new teacher at EPS, I was offered many training courses. EMU is full of opportunities for motivated teachers and students who

are keen on learning. I have been in this university since 1995 and I have never felt bored. EMU is a kind of energy source for me.

■ **What are your short-term plans after you obtain your Ph.D. Degree?**

Publishing papers related to my Ph.D. study is now on the top of my priority list.

■ **Do you have any messages for our prospective graduate students?**

Yes. I strongly recommend them to choose an area that they are really interested in since Ph.D. studies may take longer time than expected. I believe that this can at least help them not to lose their interest in their study. My experience at EMU has been a very good one so I would strongly recommend my institution to any prospective students.

■ **Finally would you like to add anything else?**

Hopefully, next year I will contribute to the research newsletter not as a Ph.D. student but as Ph.D. holder.

WHY DON'T YOU...

...share this interview with your undergraduate students? Please direct them to <http://research.emu.edu.tr>.



PRINCE JOVELURO
I graduated in the Spring of 2008 from the Electrical/Electronic Engineering Department of Eastern Mediterranean University. After my graduation, I got admission to the University of Surrey

UK, in April 2008 for a Ph.D. program in Multimedia Communications in the Centre for Communication Systems Research (CCSR/iLab). Presently, I am in my second year and my research area is in Distributed Video Coding (DVC) which is a video coding paradigm that deals with independent encoding of two statistically dependent sources from a bivariate distribution and joint decoding of these sources based on their correlation. It is a shift from the conventional video codecs with the aim of a less complex encoder and a more complex decoder to fit into recent advancing technologies. I enjoyed every minute I spent in North Cyprus and EMU, you never know how nice it is till you leave. It is in fact one of the best places to study in the world. Education in EMU is really challenging, but prepares you for what is ahead. I have been able to cope with my studies because of the good and solid foundation which I gained at EMU and I'll always be grateful for that. I just want to use this opportunity to thank everyone in the Electrical/Electronic Engineering Department.



ESRA KADIOĞLU
I graduated from EMU Computer Engineering Department in 1997 with a B.S. degree. I was among the group of first graduates of the Department. After graduation, I attended EMU Computer Engineering

Department for another two years and got my M.S. degree in 1999. Then I went to the USA, and got a Ph.D. degree in Computer Science at the University of Minnesota. Currently, I'm a faculty member at TOBB University of Economics and Technology Computer Engineering Department in Ankara, Turkey. My research area is in robotics, more specifically, I work on path planning for mobile robots and task allocation/cooperation in multi-robot systems. I'm also interested in service robotics,

where robots are designed to be used in everyday/practical tasks. As I stated before, I was among the first graduates of the EMU Computer Engineering Department. Our instructors were all new members of the Department and really enthusiastic about providing us the best in terms of both education and guidance. I'd like to thank them all for everything they did for us.



ALDA KOKALLAJ
I graduated from the Department of International Relations at EMU in 2003. In 2005, I received my Master's degree from the same department. After EMU, I moved on to do my Ph.D. at Carleton University in Ottawa, Canada.

I am currently working on my Ph.D. in Political Science and Political Economy. My Ph.D. dissertation focuses on the international political economy of environmental governance considered from a Gramscian perspective. I am particularly interested in environmental policies of the World Bank and the European Bank of Reconstruction and Development in post-communist transition economies and the implications of their development projects for global environmental governance. My present research interests are on the nature/society/state relationship and its implications for international political ecology, environmental governance, more broadly, International Relations Theories, International Organizations, and Environmental Politics. My experience at EMU shaped my current research interests in many ways, especially working with my M.A. thesis supervisor Wojciech Forsysinsky and the courses offered by Hannes Lacher shaped my interest towards International Relations Theories and International Organizations. Also being a Teaching Assistant at EMU, formed my interest for environmental politics.



WHY DON'T YOU...
...recommend a former student of yours for the next issue?

The following is the list of students who have successfully completed their postgraduate degrees in Fall 2008-2009. This list has been provided by EMU Institute of Graduate Studies and Research on 27 March 2009.

■ LL.M. ■

Law

Burak Demirkaya
Thesis Title: Türk Hukukunda ve Kıbrıs Türk Hukukunda Motorlu Araç İşletenlerin Sorumluluğu
Supervisor: Hasan İşgüzar

■ M.A. ■

English Literature and Humanities

Ash Özgen Tuncer
Thesis Title: Re-configuring the Veil in the Art of Shirin Neshat after Lacan, Kristeva and Deleuze
Supervisor: John Wall

Turkish Language and Literature

Nigar Alyaz
Thesis Title: Kıbrıs Türk Edebiyatında (1908-1974) Öyküler Üzerine Tematik Bir İnceleme
Supervisor: Adnan Akgün

■ M.Arch. ■

Architecture

Anastasia Artyukhova
Thesis Title: The Major Effects of Colours in Various Interior Spaces on the Performance,

Behaviour and Psycho-Physiological Well-Being of the Users
Supervisor: Erdal Aksugür

Müge Rıza
Thesis Title: A Review on the Design of New Buildings in Historic Settings
Supervisor: Naciye Doratlı

Saba Noory Yeganeh
Thesis Title: A Critical Study of Developments in Auditorium Design in the Last Fifty Years (1960-2009)
Supervisor: Mesut B. Özdeniz

■ MBA ■

Business Administration

Fru Boniface Ayoche Ngu
Thesis Title: Measuring Student Satisfaction in EMU and its Impact on Post-Purchase Behavioral Responses
Supervisor: Selcan Timur

Maryam Kardoush
Thesis Title: The Barriers to the Recruitment and Retention of Supervisors/Managers in the Hospitality Industry of Turkish Republic of North Cyprus
Supervisor: Selcan Timur

Murad Alakbarov
Thesis Title: Sustainable Consumption and Green Consumers: Case of EMU Students
Supervisor: Mustafa Tümer

Seyed Sarang Hashemi
Thesis Title: The Governance

of Knowledge Exchange: An Institutional Approach
Supervisor: Mehmet İslamoğlu

Server Yavaş
Thesis Title: Job Search Behaviors of Graduate and Graduating Students of Eastern Mediterranean University
Supervisor: Cem Tanova

Yasaman Alidad
Thesis Title: Perception of Organizational Justice and its Impact on Job Satisfaction: A Study of EMU Research Assistants
Supervisor: Tarık Timur

■ M.Ed. ■

Educational Sciences

Aynur Shibliyeva
Thesis Title: Use of communication strategies by Learners of English with a Turkish Language Background: A Cross-Cultural Perspective
Supervisor: Hüseyin Yaratın
Co-Supervisor: Naciye Kunt

Leman Kasapoğlu
Thesis Title: An Investigation of the Relationship between Attitude, Anxiety and Mathematical Achievement: Differences According to gender and school location
Supervisor: Hüseyin Yaratın

■ M.S. ■

Banking and Finance

Elif Şenyücel
Thesis Title: Bank Selection Criteria in the Cypriot Banking Industry: Empirical Evidence

from the Turkish and the Greek Speaking Areas in Cyprus
Supervisor: Sami Fethi

Gerald Ndoping
Thesis Title: Financial Risk Management Practices of İşbank
Supervisor: Hatice Jenkins

Mahin Samadof
Thesis Title: Public Private Partnership Contractual Agreement in Iran: The Cases of Tabriz Petrochemical Company and Mobarakeh Steel Complex
Supervisor: Hasan A. Bıçak

Mostafa Jafari
Thesis Title: An Integrated Investment Appraisal of the Brazilian Ethanol Pipeline
Supervisor: Hasan A. Bıçak

Nwin-Anefo Fru Asaba
Thesis Title: An Integrated Appraisal of a Portland Cement Plant
Supervisor: Glenn P. Jenkins

Oyinlola Morounfoluwa Esan
Thesis Title: Impact of a Monetary Union on Trade in the West Africa Monetary Zone
Supervisor: Mustafa Besim

Chemistry

Abimbola Ololade Aleshinloye
Thesis Title: Multichromophoric Perylene Bisimide Dyes
Supervisor: Huriye İcıl

Civil Engineering

Arash Farzam
Thesis Title: Inelastic

Performance and Economical Assessment of Concentrically Braced Steel Frames by Nonlinear Static (Pushover) Analysis
Supervisor: Mürüde Çelikağ

Computer Engineering

Abosede Mary Oyeniye
Thesis Title: Performance Evaluation of Ad Hoc Wireless Networks
Supervisor: Gürcü Öz

Zahra Abbas Shargi
Thesis Title: Models and Methods of Dissemination Information in Wireless Ad Hoc Network
Supervisor: Alexander Kostin

Economics

Lawrence Ejime Iweriebor
Thesis Title: Crude Oil Resource and Economic Performance: Case of Nigeria
Supervisor: Cem Payaslıoğlu

Mostafa Shahee
Thesis Title: A Review of Oil Demand in China in 2030 Considering Intersubstitutability Relations between Oil and Other Types of Energy in Power Sector
Supervisor: Cem Payaslıoğlu

Electrical & Electronic Engineering

Mehdi Davoudi
Thesis Title: Diagnosis of Electron Cyclotron Heating Power Deposition on Frascati Tokamak Upgrade (FTU)
Supervisor: Şener Uysal

Industrial Engineering

Burcu Özoğul
Thesis Title: Study of Performance of Eastern Mediterranean University Students
Supervisor: Adham A. Mackieh

Mohammad Khanjani
Thesis Title: Application of Measurement System Analysis at the ABC Company
Supervisor: Gökhan İzbirak

Orçun Ersayın
Thesis Title: Case Studies and Structural Analysis in Recycling of Reusable Items Consumed in Huge Quantities
Supervisor: Bela Vizvari

Sevtap Çatalbaş
Thesis Title: Impact of Supply Chain Strategies on Bullwhip Effect
Supervisor: Nureddin Kırkavak

Mechanical Engineering

Bahman Bidmeshki
Thesis Title: Simulation of Hydrodynamics Using SPH Method
Supervisor: Hikmet S. Aybar

M. Reza Azizian
Thesis Title: Evaluation of Thermophysical Properties of Nanofluids
Supervisor: Hikmet S. Aybar

Murat Özdenefe
Thesis Title: Promotion of Trigeneration for Holiday Accommodation Facilities in N. Cyprus
Supervisor: Uğur Atikol

Raheleh Nowzari
Thesis Title: Thermal and Economic Feasibility of Trombe Wall Utilization in a Model Building
Supervisor: Uğur Atikol

Tourism Management

Adolphus Emeka Muoghalu
Thesis Title: The Job Satisfaction of Restaurant Employees: A Case Study of Lagos, Nigeria
Supervisor: Güven Ardahan

Ethel Awasiri Angum Asangmbeng
Thesis Title: Social and Economic Impacts of Residential Tourism: Perception of Host Society and the Residential Tourists
Supervisor: Mine Haktanır

İpek Ersoyoğlu
Thesis Title: Identification of Major Factors Affecting Small Business Development in Tourism: Preliminary Survey on Travel Agencies in TRNC
Supervisor: Ruchan K. Vaziri

Kayode Dare Aleshinloye
Thesis Title: An Investigation of the Selected Consequences of Emotional Labor: A Study of Frontline Hotel Employees in Nigeria
Supervisor: Osman M. Karatepe

Ladan Zargar Tizabi
Thesis Title: Resources, Customer Aggression and Job Outcomes: A Study of Frontline Hotel Employees
Supervisor: Osman M. Karatepe

Leyla Valieva
Thesis Title: Perceptions of Tatarstan Residents on Tourism Development
Supervisor: Hüseyin Araslı

Noushin Zamani
Thesis Title: Traveler's Perception of Domestic Tourism Development in Iran
Supervisor: Habib Alipour

Olusegun Adekunle Olugbade
Thesis Title: The Impact of Work Engagement on Frontline Employees' Outcomes: An Empirical Investigation in the Nigerian Hotel Industry
Supervisor: Osman M. Karatepe

Walter Ifesinachi Eze
Thesis Title: Strategic Management Accounting and Performance Measurement in Nigerian Hotels: A contingency-based Study
Supervisor: Mine Haktanır

■ Ph.D. ■

Applied Mathematics and Computer Science

Hüseyin Lort
Thesis Title: Modelling and Analysis of Permutation Admissibility with CP-nets
Supervisor: Rza Bashirov

Architecture

Farnaz Pakdel
Thesis Title: Measuring Sense of Place in Traditional Iranian Bazaar
Supervisor: İbrahim Numan

English Language Teaching

Sitkiye Kuter
Thesis Title: An Evaluation of the Collaboration Dimension of the Proposed Faculty-School Partnership Model in Initial Teacher Education in Northern Cyprus: A Case Study
Supervisor: Sabri Koç

Computer Engineering

Mehtap Köse Ulukök
Thesis Title: Concurrent Path Construction and Global Map Building Using a Novel Look-ahead Strategy
Supervisor: Adnan Acan

On behalf of EMU family, we congratulate our graduates and wish them continued success.

Journal Publications (SCI, SSCI, AHCI)

The journal publications listed here are those that are listed in Arts & Humanities Citation Index (A&HCI), Science Citation Index Expanded (SCI-Expanded), or Social Sciences Citation Index (SSCI). A search on ISI Web of Science was performed on 23 May 2009 to retrieve articles with at least one author having EMU affiliation. This list may not be comprehensive as some articles could be deposited to ISI after the query date.

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■ Erratum ■

The following publication has been incorrectly listed in issue 2008/4. We apologize for any inconvenience.

Tuna G. (2008) "The Effectiveness of Central Bank Intervention: Evidence from Turkey." *Applied Economics* 30: 1-15.