International Brokerage Event
Brussels, 26-27/10/2017

CITIES OF THE FUTURE
BRUSSELS 2017

ÖZYEĞİN UNIVERSITY

Özyeğin University

Center for Energy, Environment and Economy

Cem Keskin

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Description of the Organization

OzU/CEEE focusses on **complex** nature of energy usage in buildings. The CEEE researchers develop **data driven, interactive and adaptable systems** and services for built environment where human **comfort and energy efficiency** are the two high priority objectives. The trans-disciplinary research conducted at CEEE towards high-performance buildings include the following three research areas on:

- Human-building interaction
- Cyber-physical systems
- Advance energy science for buildings

Ongoing EU Projects:

- **TRIBE:**"**TR**a**I**ning **B**ehaviours towards **E**nergy efficiency: Play it!" (H2020/TRIBE:EE-11-2014)
- **NEED4B:**"New Energy Efficient Demonstration for Buildings" (EU-FP7)
- **BRICKER:**"Total Renovation Strategies for Energy Reduction in Public Building Stock"(EU-FP7)
- **Capacity Development For Future Builders** (EU & CFCU Co-funded/TR2013/0327.05.01-02)

Description of the research interest

Prof. M. Pınar Mengüç
Director

Yasemin Somuncu
Senior Researcher

Cem Keskin
PhD. Candidate Researcher

Dr. Özlem Bahadır Karaoğlu
Senior Researcher

Dr. Azadeh Didari
Senior Researcher

Doğa Gizem Memiş
Researcher

Dilek Murtezaoğlu Saygı
Admin. Team Manager

Gülçin Mezireli
Project Financial Consultant

Graduate Students

- Roxana Family, PhD. Candidate
- Cem Doğan Şahin, PhD. Student
- Layth Wahdah Ismael, PhD. Candidate
- Raaid Rashad Jassem Al Doury, PhD. Candidate
- Haydar Mohammad, PhD. Candidate
- Elif Gizem Tunçel, MSc Student
- Ebru Tatar, MSc Student

Research Infrastructure

- Campus wide energy automation system
- Expanded energy monitoring system for 17 zones in an academic building
- Maker Lab
- IoT Workshop
- Work stations for data analysis
- External GPUs for faster machine learning
- High performance computer

"Redefining Building Energy Efficiency in the Domain of Complex Socio-Technical Systems"

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- **Objectives:**
  - to discuss and re-define socially constructed and society shaping user behavior towards energy efficiency with the help of building physics and complex systems theory
  - to use proven real data to leverage consumer awareness by means of persuasive technology, augmented reality, micro-gamification and bots
  - to facilitate collective decisions/actions capability of citizens by social engagement for more energy-aware prefecence elicitation and more active energy oriented social communities
- **Expected results**
  - increased human-society, human-entity and human-computer interaction in the domain of energy efficiency
  - increased engagement of citizens with a better cyber-infrastructure of building energy management
  - increased capacity of cooperation between consumers and companies for more cost-effective, comprehensive and complex solutions for energy efficiency
  - higher human-centric innovation and open science capabilities of players in energy efficiency market

Consortium - profile of known partners

No	Partner Name	Type	Country	Role in the Project
01	Ford Otosan	Manufacturing Company	TUR	R&D on building energy technologies and demo-site provider
02				
03				
04				
05				

Consortium - required partners

No	Expertise	Type	Country	Role in the project
01	Complex Systems			Developing both theoretical andpractical approaches to redefine energy efficiency as a complex socio-technical system
02	Systems engineering			Agent based modeling of user behaviour
03	Social Sciences			Research on social and individualistic aspects of energy consumption behavior
04	ICT			Deploying and managing infrastrure for information and communication (ICT) technologies
05	Computer Science			Developing persuasive technology solutions and human-computer interaction tools

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