



Sustainable Water and Environment Development Research Group

Sustainable Water and Environment Development Research Group (SWEDE) at Kadir Has University is dealing with environmental modeling, sensor & remote sensing research and related data analysis. Our research group consists of environmental and industrial engineers from Kadir Has University in Istanbul, Turkey. We are experts in dynamic environmental and predictive modelling problems. We also study socio-economic aspects of sustainable development of water and environment.

Field of Interest –

Energy and environment-related problems that result from increasing CO₂ concentration emitted mostly from fossil fuel usage and rapid urbanization are among the biggest challenges for our world today. Increase in air pollution, climate change and more frequent extreme events are few examples among many.

We are interested in intelligent ICT systems that can monitor the current and past status of an environmental system through a network of measurement devices and satellite measurements and make quick decisions on how system will respond based on advanced algorithms. Through analysis of big environment data, the smart system will be able to make predictions on the state of the environment as well as effect of future changes on the environment, also considering their economic and social impacts. The tools that we develop are combinations of numerical simulations of various components of environmental systems and corresponding measurements obtained from measuring devices and sensors.

Our Experience –

SWEDE was established for the purpose of contributing to the environmental and water research, particularly conducting interdisciplinary data analytics and predictive science research to propose new solutions to the environmental problems facing the world. The research group aims at creating awareness on the relationship between environment and sustainable development and thus, influencing policy-makers and legislators through dissemination of its research activities. Current work of SWEDE focuses on predictive science and modelling, renewable energy transition modelling and climate change.

Our research group consists of successful academicians who has published in respected journals. We were able to receive a significant research grant from the Turkish Scientific and Technological Research Institute (TUBITAK) and H2020 program. We have research experience with three ongoing H2020 projects.

Dr. Mustafa Hekimoglu obtained his PhD degree from Erasmus University in management and econometrics. He has been involved with research and consulting projects that aim to develop optimum solutions for spare parts management problems in the Netherlands for five years. Moreover, he worked as the scientific expert and consultant in a spare parts optimization projects at Turkish Technic, which is a Maintenance Repair Organization providing service for Turkish Airlines in Istanbul.

Dr. Gokhan Kirkil obtained his PhD degree from University of Iowa in civil and environmental engineering and worked as a research staff member in Atmospheric, Earth and Energy Division at Lawrence Livermore National Laboratory for three years. His research interests include urban engineering, air pollution, water planning and control, energy system modelling, renewable energy systems. He has been teaching energy modeling and simulation, renewable energy sources at Kadir Has University for the past 3 years. His recent work is on model renewable energy transition scenarios for Turkey using Leap and Osemosys.

In addition to these significant research experience in predictive science, simulating energy systems, generation of renewable energy and energy efficiency, researchers in our group have been involved with research and consulting projects that aim to develop optimum solutions for resource management problems.

Our role as a partner - We are particularly interested in finding partners in H2020 calls targeting environmental monitoring, validation of sensor data, and providing solutions to municipalities and environmental agencies in this regard.

Currently we are targeting FETPROACT-EIC-08-2020 and we are interested in taking an active role and collaborate in design, development, and implementation phases of potential research projects towards this call.

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