List of Dissertation Abstract　(Department of Artificial Environment)

Name	Supervisor	Title	Abstract
Nakano Yuuki	HONDO Hiroki	Effects of information provision through narrative on environmental behavior	It is important to focus on automatic and intuitive information processing style which have received little attention in information provision on environmental issues. This study aims to reveal effects of information provision through narratives on behavioral intentions and policy acceptance about environmental issues. Results show that narrative information leads to higher behavioral intentions and policy acceptance than logical information, and this tendency is more pronounced when people have little interest.
Shuto Susumu	Amemiya Takashi	Research on the flamework for the effective inference on the parameters of the probability distribution function relevant to reliability and safety	This work aimed to develop the framework to perform parameter estimation effectively for probability distribution functions relevant to reliability and safety. This framework is designed to make estimation with sufficiently high accuracy even for small number of observations. In addition, the estimation is also sufficiently robust under the considerable uncertainty. The sequential Bayesian inference and the effective use of prior information were investigated in this work to propose the newly developed framework. This framework was applied to real cases to see its effectiveness and future challenges.

Nudejima Chieko	Kameya Takashi	Development of an efficient annual average value evaluation method and accuracy verification of model estimated value on atmospheric concentration monitoring of volatile organic compounds	To promote surveillance of the environmental improvement status of chemical substances by local governments, etc., we demonstrated the effectiveness of the one-week continuous sampling method which make possible to estimate the annual average of ambient air concentrations of volatile organic compounds (VOCs) accurately and efficiently, and also confirmed that many substances are stably preserved within the sampling period of one-week. In the estimation of ambient air concentrations, we confirmed that the model simulation fits well for many substances with high PRTR emissions, and we identified the substances for which background concentration correction is effective.
Kawatsu Kaname	Miyake Atsumi	A framework for the utilization of multi-physics and system-level model from a perspective on risk through spacecraft system life cycle	In this study, a framework for the utilization of multi-physics and system-level model from a perspective on risk through spacecraft system life cycle was constructed, aiming to improve the efficiency of risk assessment and rationality of risk treatment for spacecraft systems. The effectiveness of the proposed framework was confirmed by applying it to the spacecraft system, and also by applying it to the hydrogen refueling station, which is also an advanced engineering system.

Suzuki Tomoya	Miyake Atsumi	Advancement in risk analysis for energy systems using model-based risk analysis	The objective of this research is to advance the risk analysis of energy systems using model-based risk analysis based on the Physics model, which enables the physical and dynamic properties of the system to be obtained. The research advances the risk analysis which is carried out continuously from the design and development stage to the operation stage of each energy system (production, storage, utilization equipment, etc.) of a decentralized energy system for sustainable energy utilization.
Matsumoto Shogen	Ito Akihiko	Study on scintillation properties of Lu_2O_3–Al_2O_3 thick film phosphors prepared by high-speed chemical vapor deposition method	Radiography has been widely used in fields such as non-destructive testing for medical diagnostics or research and developments and radiation monitoring for decontamination work in nuclear power plants. Recently, thick film scintillators with a few tens of micrometers thickness can improve the sensitivity and resolution in radiation detection and imaging. In present study, thick film scintillators were prepared by high-speed chemical vapor deposition and their scintillation properties were evaluated.