別紙

新学術領域研究（研究領域提案型）の研究概要（英語版）

Aquatic Functional Materials: Creation of New Materials Science for Environment-Friendly and Active Functions

http:// www.aquatic-functional-materials.org/

Number of Research Area	:	6104	Term of Project :	FY2019-2023
Head Investigator	:	Takashi Kato		
Research Institution	:	The University of Tokyo, Graduate School of Engineering		

In this research project, we focus on “Aquatic Functional Materials” which is defined as materials that harmonize and interact with environment in the existence of “water” through fusion of “materials science” and “basic science of water”. We create and establish materials science on “Aquatic Functional Materials” based on fundamental science of structure-function relationship between water and materials from a wide range of standpoint of views including organic chemistry, polymer chemistry, physics, measurements and computational science, and engineering. Interactions between “water” and “materials” in the level of molecules and molecular nano-assemblies are understood for the creative development of aquatic functional materials with electronic/ionic, bio/environmental, and mechano-functions. These approaches lead to create scientific research on innovative areas in the field of advanced materials science.

Research Group A01: Studies on design of molecular assemblies, materials, and functional molecules to develop aquatic functional materials. Research Group A02: Studies on structures and dynamics of materials and water using advanced measurements and simulation. Research Group A03: Studies on exploration of electronic/ionic, bio/environmental, and mechano-functions of aquatic functional materials.

The publicly offered research will mainly focus on research proposals that fit the concept and purpose of this project to establish science of aquatic functional materials for development and contribution of Japanese materials science.

For the publicly offered research, we strongly encourage to propose creative, interdisciplinary, and challenging research plans by sharing the scope of this research project. We welcome research proposals related to creation of science of “Aquatic Functional Materials” using synthesis, analysis, characterization, and theory for molecular and structure design, and exploration of functions. Scientific backgrounds are chemistry, physics, biology, engineering, syntheses of molecules and materials, device fabrication, fundamental and applied materials science of theory, calculation, and experiments and basic science of water. Total of 27 applicants will be selected. Active applications of research proposals from young and/or female scientists are welcomed.

Research Group	Upper Limit of Annual Budget (Million yen)	Number of research projects scheduled to be selected
A01 Development of Molecules and Materials	2.5	27
A02 Advanced Measurements and Simulation		
A03 Exploration of Functions		