

# Development of new materials

## by supramolecular polymer synthesis and crystal engineering

### Project Leader

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### 1. Objective

#### This project is aimed at:

We are developing new polymers or supramolecular materials and analyzing their physical properties. In polymer science, so far, we have designed functional  $\pi$ -conjugated polymers focusing on light emission and higher-order structure formation. On the other hand, we have succeeded in developing supramolecular polymers and elastic organic crystals with the aim of creating new materials in supramolecular polymer synthesis and crystal engineering.

### 2. Project Outline

#### To that end, the project will consist of the following phases:

- (a) Create and analyze elastic organic crystals
- (b) Design new functional oligomer/polymers based on  $\pi$ -conjugated structure
- (c) Conduct polymerization and supramolecular polymerization experiments

### 3. Expected Performance

#### In this project, the successful candidate would be expected to:

- (a) conduct organic synthesis
- (b) conduct X-ray crystallographic analysis
- (c) conduct basic chemical analysis

### 4. Required Skills and Knowledge

#### The successful candidate for this project will have the following knowledge and skills:

- (a) Organic Synthesis for organic molecular design.
- (b) Polymerization to study polymer chemistry
- (c) Crystal analysis for crystal engineering
- (d) Basic Photochemistry for analyses of materials

### References

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