Naito Masanobu

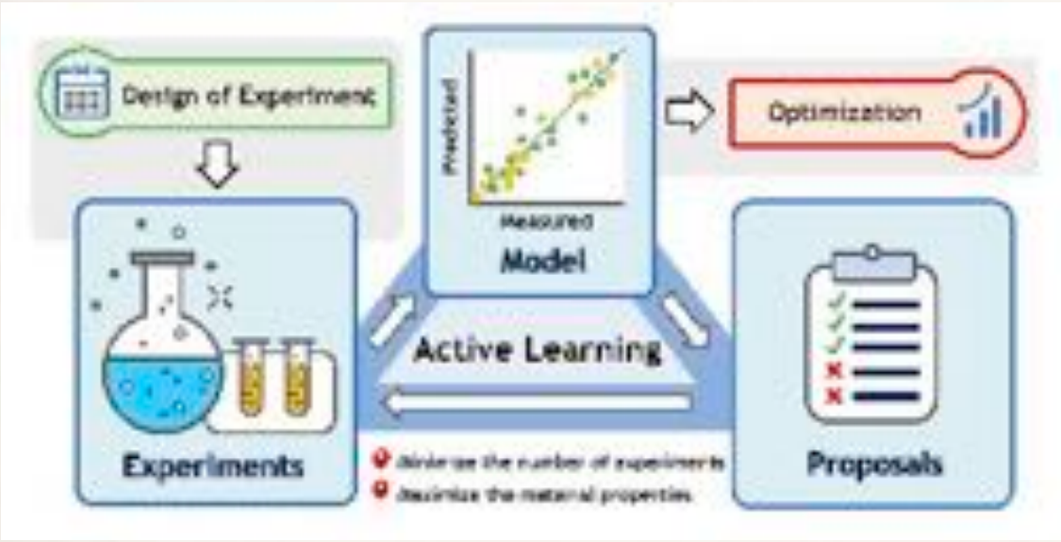
Cooperative lab with NIMS

- We aim to develop data-driven polymer materials by integrating surface analysis, polymerization technologies and processes with machine learning and smart labs. In particular, our target is functional polymer materials such as structural adhesives and coating materials.

- Visit at my website
  https://researchmap.jp/read0102698?lang=en

- Contact: NAITO.Masanobu@nims.go.jp

Polymer Smart Laboratory
&
Materials Informatics



Science and Technology of Advanced Materials, 20, 2019, 1010-1021

- We developed the novel functional polymers, such as adhesive materials, with machine learning.

- The Smart Lab will dramatically change the conventional approaches to polymer development.
- The data obtained from the Smart Lab and the data-driven material design using the data will dramatically accelerate the development of polymer materials.

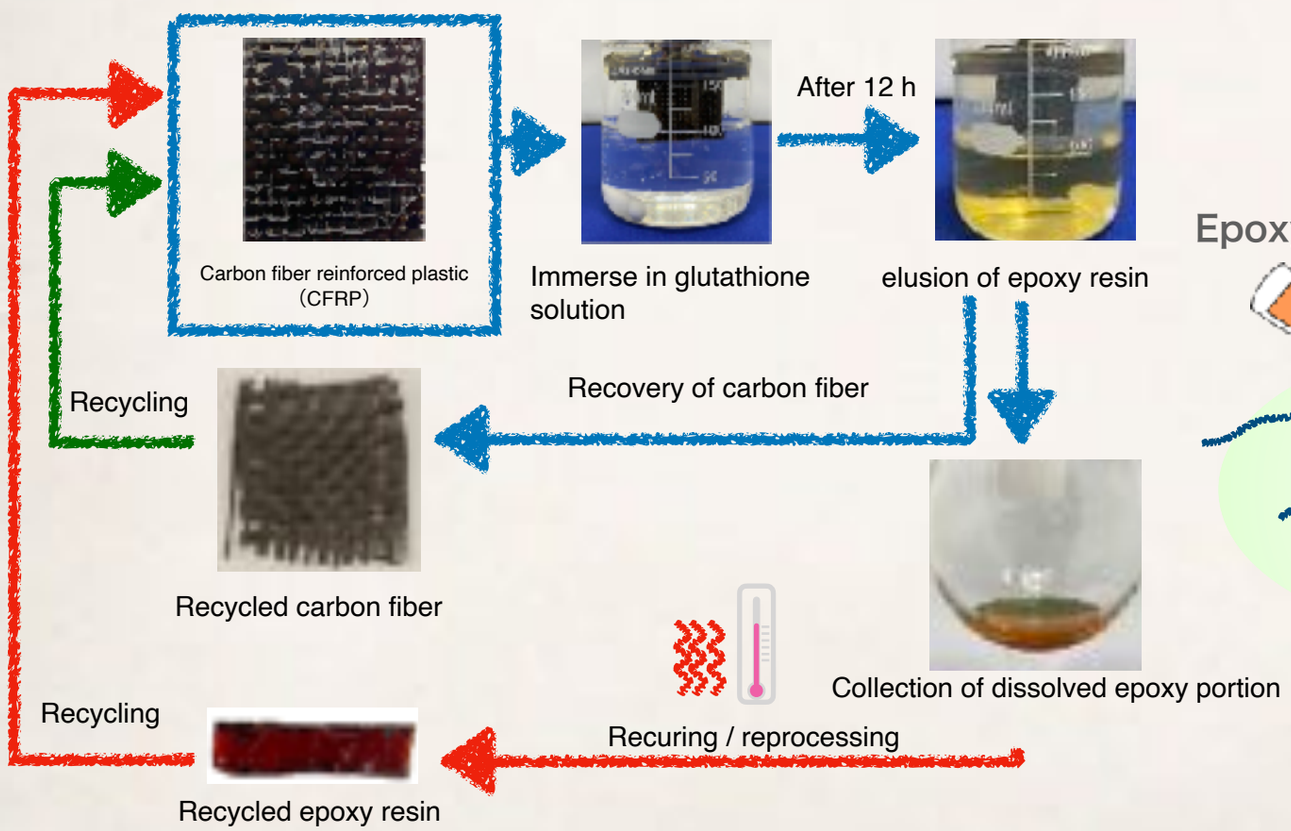
JST CREST program
"Revolution material development by fusion of strong experiments with theory/data science"

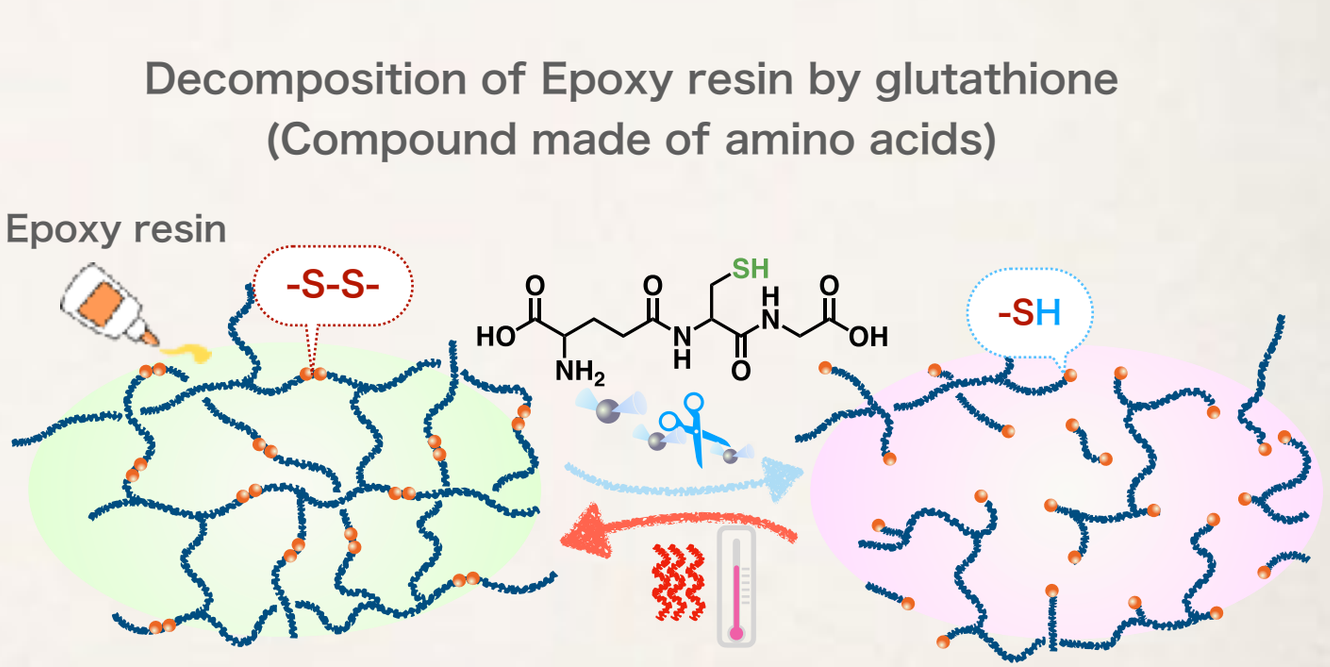
Circular Economy from Recyclable Thermoset Polymers

Simple Thermoset Plastic Recycling Using a Peptide Solution

—New Strategy for Promoting the Reuse of Carbon Fiber Reinforced Plastics (CFRP)—

Epoxy resin is a type of thermoset resin commonly used in glue, paint and composite materials. We have developed a new thermoset plastic recycling system capable of easily decomposing epoxy resins in an aqueous solution of a naturally derived peptide.





Science and Technology of Advanced Materials, 22, 2021, 532-542.

Learn from Nature
Functional Biomimetic Materials

- We have made a durable and flexible super-water-repelling material inspired by spiky porcupinefish skin.
- Learning from Nature, we develop new functional materials, such as superhydrophobic, adhesive, gradient materials.

ACS Appl. Mater. Interfaces 2019, 11, 32381−32389

Lab Philosophy

- Safety first:
  Your health and safety are more important than your research.

- What can you expect from your supervisor (me):
  My door always opens. Let's discuss any time.
  The amount of results is proportional to the number of conversations.

- What I expect of you:
  Think different, think something new.
  Treat your colleagues with respect.
  The lab should be a place where everybody feels welcome and appreciated.