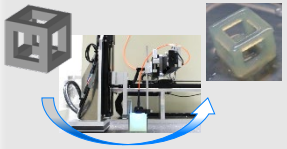
Co-Creation Research, Aiming for Social Implementation of Soft Matter

Professor Hidemitsu Furukawa

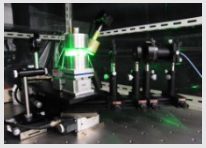
Core Technology

3D Gel Printer



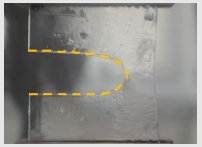
Additive Manufacturing for Polymer Gels

Structural Characterization



Scanning Microscopic Light Scattering (SMILS)

Tough Gels



High Strength Low Friction

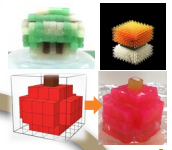
+AI･Digital Tech.

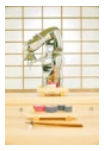
Consortium/ Research Inst.

YAWARAKA 3D

Social Implementation

Jellyfish Robots





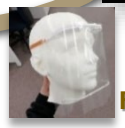
Sushi Teleportation

Soft Matter Devices

Gel Hachiko

Soft Gripper

3D Koi-Koi Jelly



Face Shield

Multi R&D Base

Soft & Wet Matter Engineering Lab.

Miraikan

知的やわらかものづくり革命プロジェクト

Former Nagai Elementary School first school House

Omoshiro-Factory

Content：

【Research Outline】

We aim to implement soft matter in society. We will promote collaborative research in cooperation with companies of Soft 3D Co-Creation Consortium and other research institutes by utilizing digital technologies based on core technologies.

【What is our strong point?】

3D Gel Printer: Tough hydrogels can be directly printed into the desired structure with our 3D Gel Printing System.

Structural Characterization: Scanning Microscopic Light Scattering (SMILS) is the non-destructive testing method for polymer gels. SMILS can evaluate the nanometer-scale mesh size in hydrogels with a small amount of sample.

Tough Gels: Printed SMGs with excellent fixity and recovery ratio have exhibited a wide range of Young's modulus 0.04 MPa-17.35MPa and strain 612%-2363% at room temperature.

Appealing point：

To smoothly implement soft matter in society, many researchers in Soft 3D Co-Creation Consortium cooperate with our projects.

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Research Interest ： Mechanics, Soft Matter

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