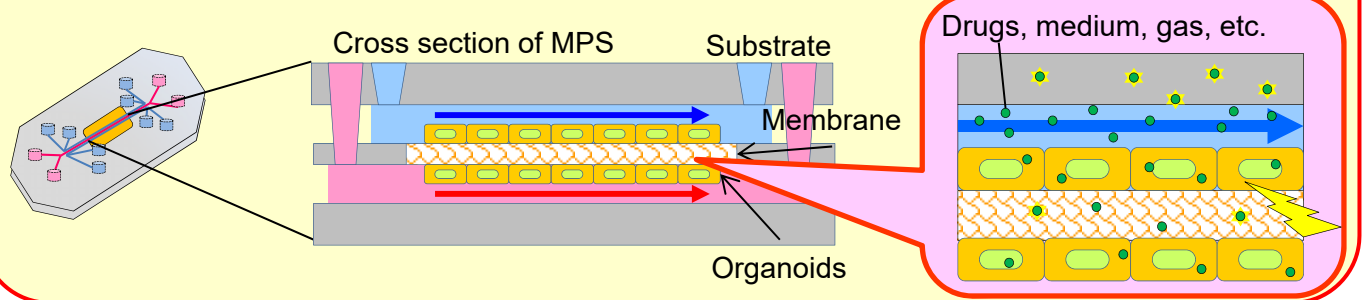


# Analysis for Organ-on-Chips Materials

MPS (Micro Physiological System) represented by Organ-on-Chips is one of the latest pharmacokinetic evaluation tools that combines cells and materials, and it is necessary to select and design optimal materials to reproduce the desired organ function.

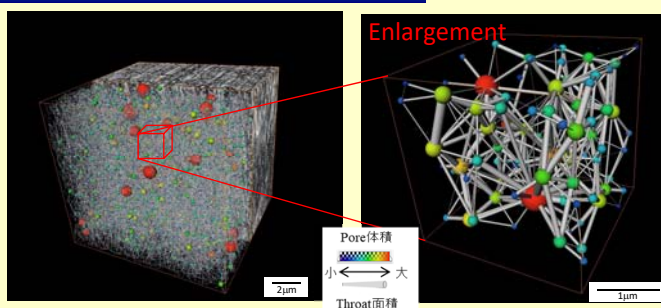
## Organ-on-chips / MPS (Biomimetic System, MicroPhysiological System)

Organ cells (Organoids) cultured in microchannel chip reproduce the biological environment



Properties	Analysis targets	Methods
Drug absorption suppression (Substrate, Membrane)	Amounts, states, distribution of drugs...	LC/MS, ICP-MS, FT-IR, TOF-SIMS...
Electrical / physical stimulus response (Substrate, Membrane)	Electrical / mechanical properties, Surface morphology...	SSRM, AFM, Viscoelasticity...
Supplying medium and gas to cells (Substrate, Membrane)	Gas permeability, Porous structure...	N <sub>2</sub> adsorption, X-CT, SEM, Analysis of medium component...
Transparency (Substrate)	Density, Crystal structure...	Density method, Raman, XRD...
Sterilization, chemical solution, heat resistance (Substrate, Membrane)	Degradation / eluent analysis	GC/MS, LC/MS, ICP-MS, ESR, FT-IR...
Cell affinity (Membrane)	Material-Cell interaction, Viscoelasticity, Surface morphology / composition / charge, Intermediate water	ELISA, SPR, Viscoelasticity, AFM, TOF-SIMS, ζ potential, NMR, DSC, XRD, Neutron scattering

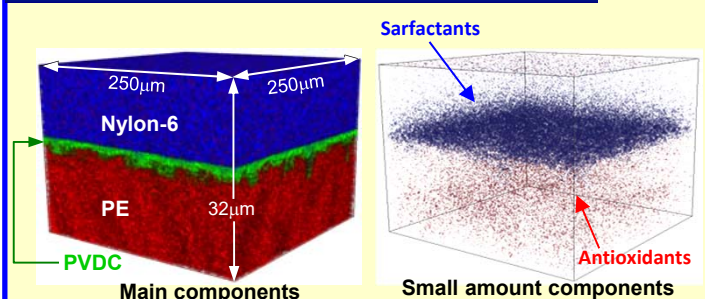
### Ex. Porous Structure (3D-SEM)



#### Network analysis for porous film

The structural parameters of membrane contributing to the permeability of various components can be obtained.

### Ex. Composition Distribution (TOF-SIMS)



#### Composition imaging for multilayer film

The adsorption site / state of drugs and medium components to materials can be visualized.

Organ-on-Chips require various materials depending on the application.

We comprehensively propose and perform analysis suitable for customer's target materials based on our abundant experience in analyses for materials and biological.