

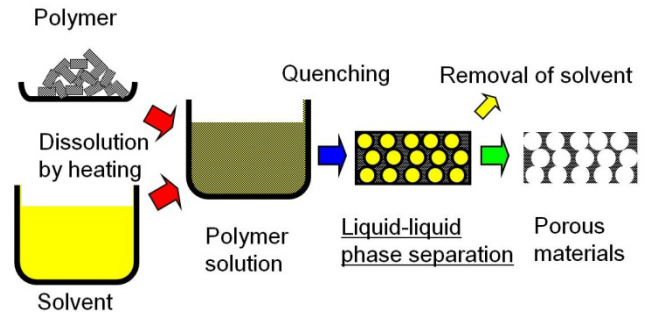


## Development of membrane-type porous polymer biomaterials by using phase separation method

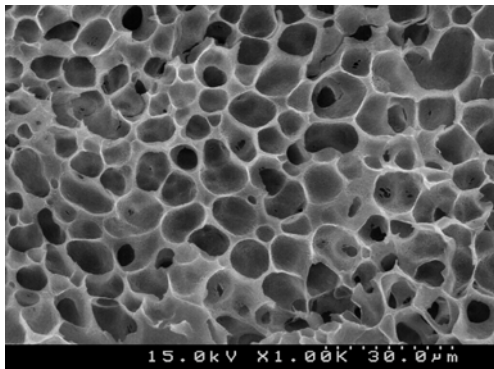
### Technical Features

We are developing membrane-type porous biomaterials of bioabsorbable polymers, e.g. poly(L-lactic acid) and chitin. The pore size and porous structure of bioabsorbable polyester membranes are tunable by varying the conditions of phase separation method. Fingerstalls and branch pipes of chitin gel are manufacturable.

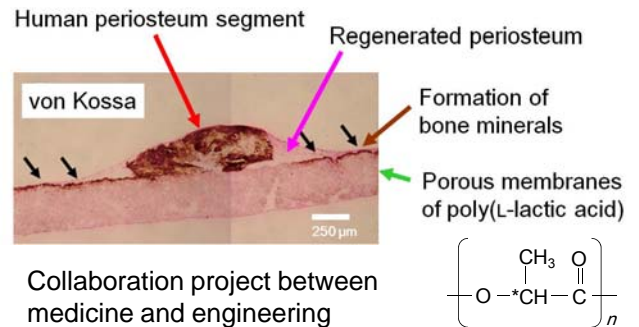
### Porous polymer materials prepared by phase separation method



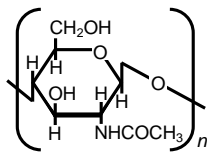
### Porous membrane of poly(L-lactic acid)



### Porous membrane for regenerative medicine



### Various shapes of chitin gel membranes



Fingerstall for wound dressing



Three-branched pipe for artificial organs

### Merits of Porous Materials

- Large internal surface → scaffolds for cells
- Rough surface → anchors for regenerating tissues
- Hybridization of different materials by using pores → composite materials including those for DDS
- Permeation control by pores → barrier and separation membranes
- Improved mechanical properties → flexible biomaterials

