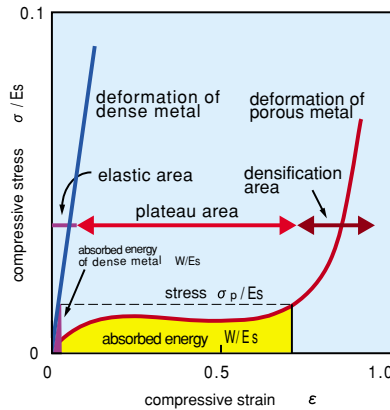


# New Application of Porous Metals

## - Technology to Control the Material Porosity -

Recently, processing technology has been improved and many kinds of porous metals with a higher porosity than 80% can be obtained. New functional materials made of porous light-weighted metals have been promoted by their lightness and their special functions. For example, the following new materials are purchased in the laboratory, magnesium materials with such low density as  $50 \text{ kg/m}^3$ , titanium implant materials with higher bio-compatibility, and better crash worthiness of aluminium materials for light-weighted vehicles which are the most effective material to reduce the emission of greenhouse gas.



Compressive deformation of porous material;  
remarkable absorption energy can be obtainable

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AIST Today Vol. 2, No. 2  
(2002) 13

# Development of Coloration of Glasses and its Application for Recycling of Glass Products

The technology to color glasses with X-ray radiation and ultraviolet rays and decolor glasses by heating was developed. The coloration and decoloration can be repeatedly done, and the technology can be applied to glass recycling and reuse. Coloration can be done without damaging the hardness of the surface of glasses. The coloration of whole glasses as well as the painting of characteristics and pictures on glasses are possible. Decoloration with no change in the shape of glasses is also possible.



Example of coloration by use of ordinary sheet glass

- 1 Ag nanoparticle
- 2 Change of Mn ion valence
- 3 Color center
- 4 Decorated glass by Ag nanoparticle

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AIST Today Vol. 2, No. 2  
(2002) 14