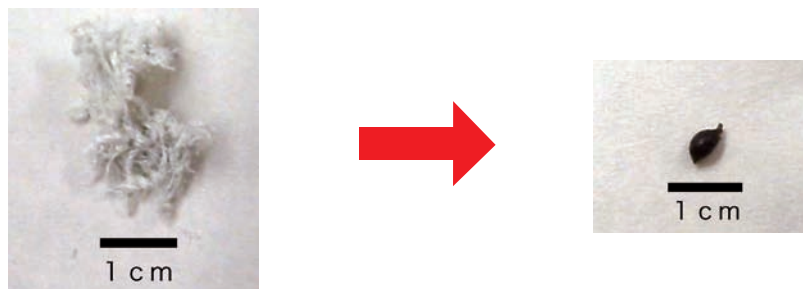


## A melt-treatment of asbestos by heating with infrared light

### Possible application to an easy and safe treatment for asbestos on site

We have developed a new on-site method to melt noxious industrial wastes including asbestos easily using infrared radiation from halogen lamps. The harmful property of asbestos originates from its long and thin fiber shape. So far, it has been very difficult to make the waste innocuous since the melting temperatures of asbestos are very high (~1500 °C). Estimated stock of various kinds of waste containing asbestos in Japan is about 108 ton, and its treatment may take a long period of about 100 years using present facilities. If our technique is employed, all relevant cost can be fairly reduced.



(left) Asbestos (chrysotile) before melt and (right) asbestos after melt.

**Shinichi Ikeda**

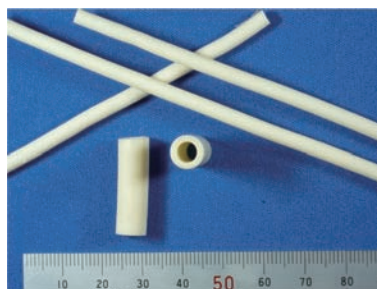
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## A new inorganic binder

### Aiming to develop an environment-friendly ceramic process with the binder

We have developed a new inorganic binder with both rigidity and flowability for extrusion technique. It is based on the hydration of  $\rho$ - $\text{Al}_2\text{O}_3$  ( $\text{Al}_2\text{O}_3 \cdot n\text{H}_2\text{O}$ ,  $n \div 0.5$ ), one of the alumina hydrates. Under optimum processing conditions for the amount of this binder and hydration condition, alumina rods and tubes were successfully prepared by the extrusion technique. Conventional extrusion technique requires the use of an organic binder to impart flowability and rigidity to the starting materials. However, the organic binder must be completely burnt out, which results in emission of  $\text{CO}_2$ . The inorganic binder is a promising material for conversion into ceramics during heating. Furthermore, during this process,  $\text{CO}_2$  is not emitted from the binder. Thus, inorganic binders are expected to contribute to the environment-friendly ceramic manufacturing process.



Alumina rods and tubes prepared by the new environment-friendly ceramic manufacturing process with the new inorganic binder.

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