

## 研究論文

## 籾殻に由来する炭素／シリカ複合材料の摺動特性

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Sliding Properties of Rice Husk-derived Carbon/Silica Composite

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The sliding properties of the composite fabricated from agriculture waste of rice husk (RH) without using any binders was investigated. The slab-shaped composites heated to 300, 500, 800, 1000, and 1200°C were prepared, and their shore hardness and sliding properties were evaluated. The composites heated to 1000°C displayed the highest Shore hardness of 99.7 HS. Sliding properties of the composites such as kinetic friction coefficient and specific wear rate were evaluated under the contact with a SUS304. The composites heated to 1000°C displayed low kinetic friction coefficient and specific wear rate, which were respectively 0.08 and  $1.7 \times 10^{-9} \text{ mm}^2/\text{N}$ . The composites were subjected to thermal shrinkage of the matrix material derived from lignocellulosic parts in RH. The thermal shrinkage led to a densification of the composite, improving the sliding properties.

**Key Words** : rice husk, composite, molding, hot-pressing, carbon, silica, hardness, sliding properties.