

ABSTRACTS

**Relationships between Thermal Expansion and Packing  
of Particles of Refractory Clay Bodies**

Susumu NAGASAKI, Akira WATANABE, Kazuhiro YOSHIKAWA  
and Kaoru UMEYA

*Yogyo Kyokaiishi (Journal of the Ceramic Association, Japan)*, **69**, 323 (1961)

Thermal expansion at temperatures up to 1000°C was determined for pressed powders of fire clays, stony substances, and their mixtures. The thermal expansion curves obtained for their mixtures did not agree with those calculated from those of their components by assuming the additive relationship. A mechanism which explains this result was described.

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**Polymerization of Ketene and Diketene**

Ryohei ODA, Sunao MUNEMIYA and Masaya OKANO

*Makromolekulare Chemie*, **43**, 149 (1961)

A polymer of the  $\beta$ -diketone type was obtained by boron trifluoride catalyzed polymerization of ketene or diketene, though its molecular weight was not so high. Its structure was mainly ascertained by infrared analysis.

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**New Addition Reactions. (I)  
Reaction of Epoxides with Ketene**

Ryohei ODA, Sunao MUNEMIYA and Masaya OKANO

*Journal of Organic Chemistry*, **26**, 1341 (1961)

By the addition reaction of 1,2-epoxides with ketene using boron trifluoride as catalyst, some  $\gamma$ -substituted  $\gamma$ -butyrolactones were obtained in about 10% yield based on epoxides.

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**Polymerization of Acetaldehyde**

Junji FURUKAWA, Takeo SAEGUSA and Hiroyasu FUJII

*Bulletin of the Japan Petroleum Institute*, **3**, 33 (1961)

It has long been known that acetaldehyde is polymerized to give amorphous polyacetaldehyde when the monomer is frozen. In this method freezing of the mon-