## 研究論文

## 水酸化ナトリウム水溶液への浸漬と熱分解処理による 廃ガラス繊維強化プラスチック(GFRP)の減量化技術の開発

宮澤雅行1,和嶋隆昌2

Reduction of discard glass fiber reinforced plastics (GFRP) using pyrolysis after immersion in sodium hydroxide solution

Masayuki Miyazawa<sup>1</sup> and Takaaki Wajima<sup>2</sup>

In this study, reduction of discard glass fiber reinforced plastics (GFRP) using pyrolysis with sodium hydroxide was attempted as a new technology. After immersing GFRP in NaOH solution to adhere NaOH on the surface of GFRP, pyrolysis treatment was performed under an inert atmosphere to occur gasification of resin and conversion of glass fiber into soluble sodium silicate in the GFRP. As a result, the gasification of the resin and the conversion of the glass fiber into soluble sodium silicate were promoted by pyrolysis treatment after the immersion in the NaOH solution. Furthermore, it was confirmed that the reduction of the weight and strength for the residue was promoted by the treatment with HCl due to the extraction of silica and calcium.

Keywords: GFRP, NaOH, pyrolysis, alkali fusion, volume reduction