Research on the Resourceization of Jellyfish Gelatin Using Its Adhesive Component

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Since the mass haunt of jellyfish due to global warming causes serious damage to many fishing grounds, a method of resourceization using the adhesive component of jellyfish gelatin was investigated. Indoor finishing materials, fiber-based insulation materials and foamed plastic insulation materials are made of polyethylene or polyvinyl chloride bonding materials that cause various diseases, and discharge toxic gases when a fire occurs. This study first examined the possibility of developing flame retardant interior finishing materials in order to realize the method of recycling jellyfish resources. By extracting the gelatin component of jellyfish, we developed a flame-retardant interior finishing material with a function of purifying air with a natural binder in a porous mineral, and the possibility of interior finishing materials was verified by comparing them with commercial interior finishing materials such as art boards and foam blocks. Jellyfish gelatin tiles proved non-flammable through a comparison of flame retardancy and smoke toxicity, and the property that formaldehyde easily binds to protein-rich substances such as gelatin as well as the effect of purifying air through a porous material was confirmed. Secondly, we tried to present the potential of bioplastics using jellyfish gelatin. The synergistic effect of enhancing the solubility and reinforcing elasticity by using the property of increasing viscosity when jellyfish gelatin and polysaccharides meet, and a method of improving the mechanical properties and moisture resistance of natural binders were studied. In addition, the possibility of bioplastics was presented through the development of specimens in which the clay mineral pearlite and zeolite were mixed.

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