

★★★ <第34回知的財産翻訳検定試験【第18回和文英訳】> ★★★
《 1 級課題 -化学- 》

【問 1】

Accordingly, in supplying biomass fuel from a bunker in the same manner as with coal fuel, in order to prevent backflow of the primary air containing pulverized fine particles of fuel in front of a downspout, which backflow is directed to the bunker from inside of a pressurized mill through a coal supply pipe and a coal feeder, it is necessary to increase the pressure loss between the coal feeder and the bunker. In addition, the state of the gap between solid fine particles of fuel is not constant and may vary when fuel particles are filled in the downspout and/or bunker of the biomass fuel. To deal with these difficulties, it is considered that the necessary differential pressure (pressure loss) is ensured by increasing the length of the downspout by a certain margin and constantly supplying seal air with a certain excess to the coal feeder. However, increasing the length between the coal feeder and the bunker leads to a higher installation position of the bunker and a larger steel-frame structure for the bunker. Further, to maintain a high amount of seal air, a power plant facility needs an increased utility equipment capacity, resulting in increased costs.

【問 2】

The ferrocyanide metal compound used in the cesium removing material of the present invention may be in a particulate form, or in a wet form containing water or the like. Note that commercially available fine powder products contain adsorbed water.

[0009]

[Binding agent]

The binding agent used in the present invention binds the ferrocyanide metal compound to a support substrate when the support substrate is impregnated or coated with the dispersion liquid, and is used in a state where the adhesive strength is sufficiently maintained so that the ferrocyanide metal compound is not easily detached or released from the support substrate. Since the ferrocyanide metal compound is in an extremely fine particulate state, if it is used as a cesium removing material in its particulate state as is, recovering and collecting it after adsorption of cesium

will require performing a recovery process, such as centrifugal separation, which is not preferable in terms of equipment and operating costs, processing time, etc. Therefore, it is necessary to ensure that recovery after adsorption of cesium is easy. Thus, in the present invention, a binding agent is used to bind the ferrocyanide metal compound to the support substrate when the support substrate is impregnated or coated with the dispersion.

【問 3】

*** START ***

[0111]

Based on the results shown in Tables 3 and 4, it was confirmed that, when samples are composed of crystal particles consisting of the main component and grain boundaries occupying the space between the crystal particles, and comprises the main component, germanium (Ge) oxide (first sub-component) and vanadium oxide (second sub-component), and the abundance ratio of the crystal particles in which Ge is substantially absent is 90% or more in the samples, they have excellent relative permittivity at 25 °C, specific electrical resistance at 225 °C, high-temperature load lifetime at 250 °C, and a high AC withstand voltage at 250 °C.

*** END ***

*** START ***

[0112]

Furthermore, it was confirmed that a laminated ceramic capacitor sample having a vanadium oxide content of from more than 1.0 mole to 5.0 mole or less and a germanium oxide content of from 10.0 mole or more to 17.5 mole or less was particularly excellent in terms of high-temperature load lifetime at 250 °C.

*** END ***

【問 4】

1. A method for classifying fine particles, the method comprising: flowing a gas containing fine particles composed of at least one type of thermoplastic resin or fine particles comprising at least one type of thermoplastic resin dispersed therein along a flow path, the flow path being branched into a plurality of flow paths to classify the fine particles,

wherein the thermoplastic resin is a polyester resin and/or a styrene resin,

wherein the thermoplastic resin has a softening temperature of 112 °C or lower and a glass transition temperature of 60 °C or higher and 75 °C or lower, and

wherein the fine particles contain a compound represented by general formula (1):

[Chemical Structure 1]



wherein R1 represents an alkyl group or an alkoxy group having 10 or more carbon atoms, R2 represents -XCOOR3 or an alkyl group having 10 or more carbon atoms, wherein X represents an alkylene group and R3 represents an alkyl group having 10 or more carbon atoms.

2. The method for classifying fine particles according to claim 1, wherein the flow of the gas has a curvature at the part where the flow path is branched into the plurality of flow paths.

3. The method for classifying fine particles according to claim 1 or 2, wherein the fine particles are electrophotographic dry toner particles.