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Effect of Photo Active Compound Structure on Photo Sensitivity of Positive Photo Sensitive Polyimide

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Heat stable positive acting compound is very important for semiconductor application as buffer coating and distribution layer¹⁾. For those candidates, positive acting polybenzoxazole²⁾ and positive acting polyimide (PDPI) is promising compounds. PDPI is composed of alkali soluble polyimide (or its precursor) and photo active compound (phenolic ester of naphthoquinone diazide). In order to obtain good PDPI, effect of PAC structure was investigated. By changing the PAC structure, development loss changes so much. From those results, we found relationship between polarity (dipole moment) of phenolic compound in the PAC and development loss. Lower dipole moment PAC gives lower development loss. In addition, we found depth direction dependency on its dissolution rate. Small development loss PDPI gives significantly small development loss on its surface region. We think PAC in the small development loss PDPI gathers on surface area due to its low dipole moment.

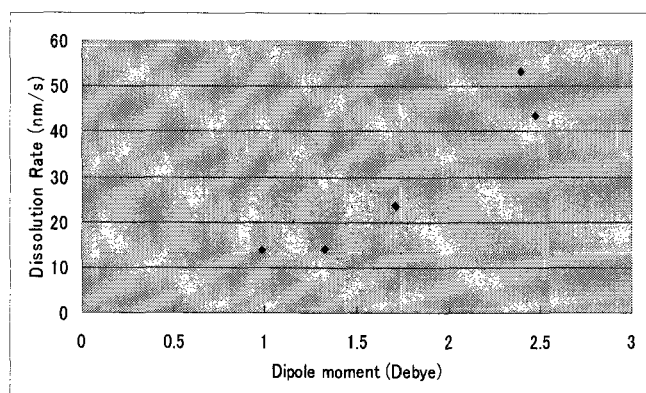


Figure 1. Relationship between dissolution rate and dipole moment of PAC

References

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