

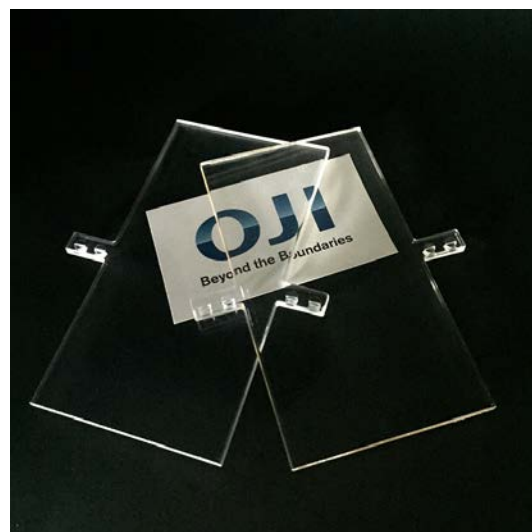
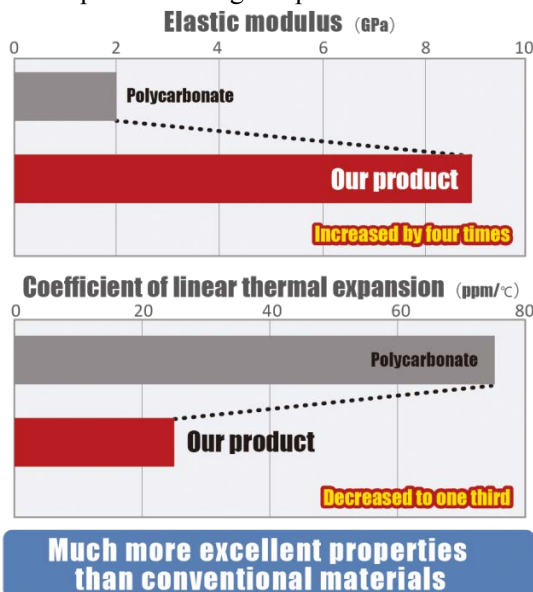
Announcement Regarding Development of Highly Functionalized Polycarbonate with Cellulose Nano-fiber

Oji Holdings Corporation (Oji) announces that we have succeeded in development of the composite material with much more excellent properties (high elastic modulus, and low thermal expansion) than those of conventional materials by combining polycarbonate (PC) with CNF^(*1).

Due to its excellent transparency and impact resistance, PC is used as light covers of automobiles, electronic device housing, and lens materials, among other things. However, it is often affected by external stress due to low elastic modulus, and deformed by heat due to high thermal expansion. Therefore, the usage is restricted in the field where dimensional stability equal to glass is required

Oji has combined PC with individualized CNF^(*2) achieved with our technology, and hereby succeeded in increasing elastic modulus of PC by four times (up to 9GPa), and decreasing coefficient of linear thermal expansion to one third (25ppm/°C, comparable to aluminum), while its excellent transparency is maintained.

We expect that this development will expand alternation of polycarbonate from glass, which was previously difficult, and PC usage in new applications. It also enables us to have benefits such as weight reduction and thermal insulation, which has not been achieved by glass. Hereafter, Oji will proceed co-development with molding manufacturers, and application development aiming for practical use within a few years.



Left : Polycarbonate (PC)
Right : The composite material of CNF and PC

(*1) CNF : Abbreviation of Cellulose Nano-Fiber.

(*2) individualized CNF : Our CNF is completely nanofibrillated fiber with 3 to 4 nm width (thinner than wavelength of visible light).