

Title (en)
Optically functional minute structure and woven fabric with such structure

Title (de)
Winzige Strukturen mit optischer Funktion und Gewebe mit solchen Strukturen

Title (fr)
Structures minuscules à fonction optique et tissu avec de telles structures

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Application
EP 99124235 A 19991203

Priority
JP 34534398 A 19981204

Abstract (en)
A minute structure has at least one of optical functions including a reflection/interference function to visible light ray, a reflection function to infrared ray and a reflection function to ultraviolet ray. The minute structure comprises a plurality of first and second polymer layers which are alternately put on one another in the direction of the thickness to constitute a layer unit, each first polymer layer having an optical refractive index "na" and a thickness "da", and each second polymer layer having an optical refractive index "nb" and a thickness "db". The minute structure is formed to satisfy the following condition: under the conditions of " $1.3 \leq na$ " and " $1.01 \leq nb/na \leq 1.40$ ", the peak wavelength " λ_1 " of primary reflection satisfies the following formula: $\frac{nb \cdot db}{na \cdot da}$ of the optical thickness "nb.db" of the second polymer layer to that "na.da" of the first polymer layer satisfies the following formula: $\frac{nb \cdot db}{na \cdot da} < 1$

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Citation (search report)

- [PA] EP 0926272 A2 19990630 - TANAKA PRECIOUS METAL IND [JP], et al
- [PA] EP 0921217 A1 19990609 - TEIJIN LTD [JP], et al & WO 9846815 A1 19981022 - TEIJIN LTD [JP], et al
- [PA] WO 9918268 A1 19990415 - NISSAN MOTOR [JP], et al
- [A] WO 9850609 A1 19981112 - NISSAN MOTOR [JP], et al
- [A] EP 0877103 A2 19981111 - NISSAN MOTOR [JP], et al
- [A] WO 9721855 A1 19970619 - NISSAN MOTOR [JP], et al
- [A] US 5472798 A 19951205 - KUMAZAWA KINYA [JP], et al & JP H0734324 A 19950203 - NISSAN MOTOR

Cited by
EP2257662A4; CN112088088A; GB2485118A; WO2011012904A3; WO03085177A1; WO2008027804A1

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