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Optical properties of thylakoid stacks PAVEL SHIBAYEV, Princeton University, PETR SHIBAEV, Fordham University — Optical properties of grana are simulated by means of 4x4 matrix approach (Berreman method). The results of calculations lead to a conclusion that even small degree of chirality, that may be present in a granum structure, results in the dramatic changes of its optical properties. Depending on the birefringence and degree of chirality in granum organization the reflection of left or right handed circularly polarized light can be greatly suppressed. This can explain the light induced difference in the growth of pea and lentil shoots irradiated by left and right handed circularly polarized light [1].

[1] Pavel P. Shibayev, R.G. Pergolizzi, The effect of circularly polarized light on the growth of plants, International journal of botany, 7, 113 (2011)

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