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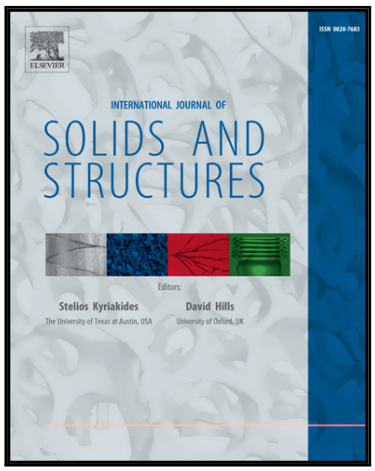

First order shear strain beam theory for spontaneous bending of liquid crystal polymer strips

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Highlights

- A beam bending model is proposed to consider the effect of transversal spontaneous shear.
- It provides an analytical tool for light/heat induced bending of liquid crystal polymer strips.
- Light/heat induced bending is affected strongly by transversal spontaneous shear.
- Energetically most favorable liquid crystal orientation is not planar nor homeotropic, but titled alignment.

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