Electronic Supporting Information

# Application of broadband infrared reflector based on cholesteric liquid crystal polymer bilayer film to windows and its impact on reducing the energy consumption in buildings

Hitesh Khandelwal,[ab] Roel C. G. M. Loonen,[c] Jan L. M. Hensen,[c] Albertus P. H. J. Schenning*[a] and Michael G. Debije*[a]

[a] Functional Organic Materials and Devices, Department of Chemical Engineering and Chemistry, Eindhoven University of Technology, Den Dolech 2, 5600 MB Eindhoven, The Netherlands,
[b] Dutch Polymer Institute (DPI), P.O. Box 902, 5600 AX Eindhoven, The Netherlands
[c] Unit Building Physics and Services, Department of the Built Environment, Eindhoven University of Technology, Den Dolech 2, 5600 MB Eindhoven, The Netherlands

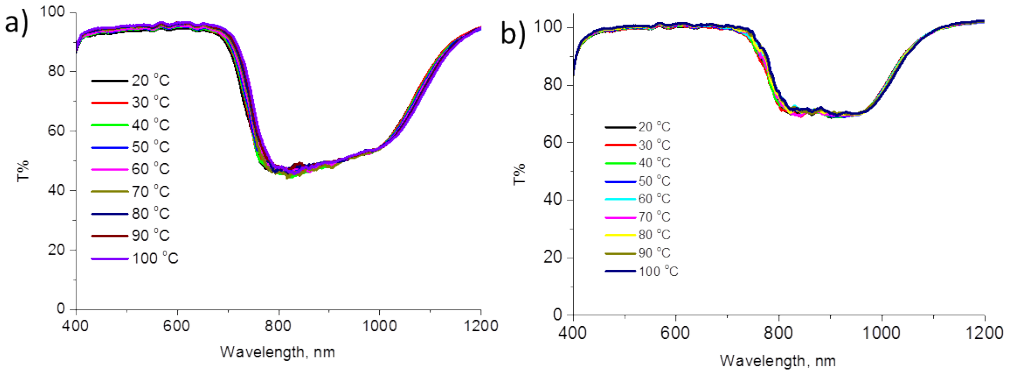


**Fig. S1** Cell transmission spectra of right-(film 2) and left-(film 4) handed films upon varying the temperature from 20 °C to 100 °C.

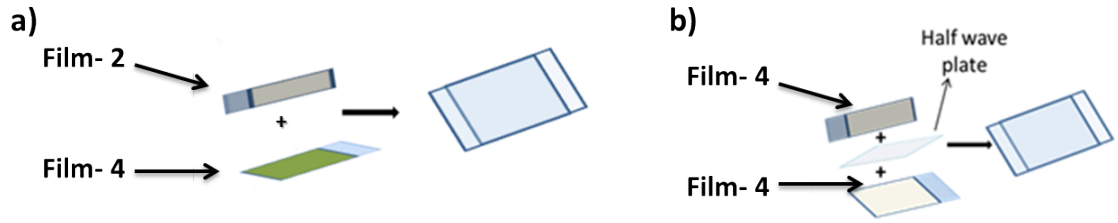


**Fig.S2** Schematic representation for the (a) preparation of right- (film 2) and left- (film 4) handed films superimposed on each other (approach 1). (b) Combination of halfwave plate inserted between two left-handed Ch-LC films (film 4).

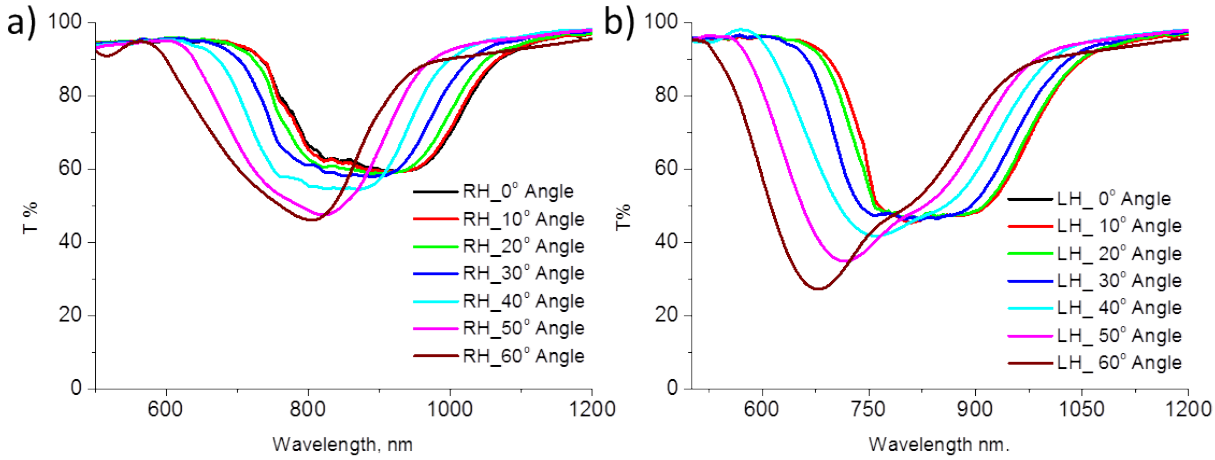


**Fig. S3** Angular dependent cell transmission spectra of (a) right-(film 2) and (b) left-(film 4) handed films.

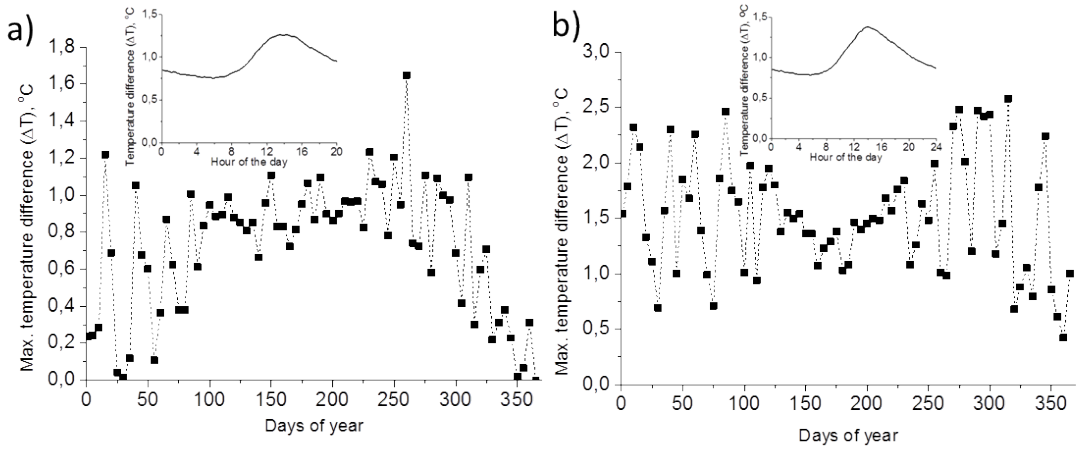


**Fig. S4** Simulated decrease in interior maximum temperature as a function of the day of the year for right- or left-handed cholesteric polymer films for an office room in (a) London, UK and (b) Chicago, USA (insets show the temperature decrease on a selected day of June 24$^{th}$).