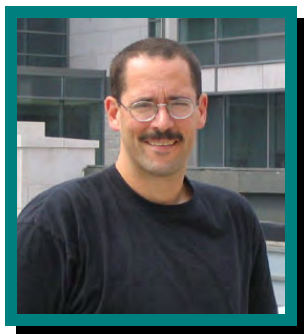




Faculté des arts et des sciences
Département de chimie
SÉMINAIRE HORS-SÉRIE



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*Photoswitchable Ferroelectric Liquid Crystals:
The Search for a Molecular Switch Hitter*

Mercredi, le 1 octobre 2003
Salle Z-330, Pavillon Principal
14h00

RÉSUMÉ :

By virtue of its spontaneous polarization (P_S), a ferroelectric liquid crystal can be switched between two states corresponding to opposite molecular tilt orientations using an applied electric field, thus producing an ON-OFF light shutter when the FLC film is placed between crossed polarizers. Considerable efforts have been made over the past decade to develop photonic FLC light shutters because of their potential uses in dynamic holography and optical data storage. A FLC light shutter can be switched ON and OFF using light by modulating P_S with a photochromic dopant. Our research has focused on two new classes of dopants for FLC photoswitches based on dithienylethene and thioindigo photochromes. Dithienylethene dopants photomodulate P_S by virtue of a destabilization of the FLC phase upon photocyclization, whereas chiral thioindigo dopants photomodulate P_S by virtue of a change in transverse dipole moment upon *trans-cis* photoisomerization. The latter forms the basis for a unique “ambidextrous” dopant which causes an inversion in the sign of P_S upon photoisomerization.



Le Département de chimie organise annuellement plusieurs séries de conférences et séminaires et tient à remercier particulièrement les commanditaires qui rendent ces programmes possibles : AstraZeneca, Boehringer Ingelheim, Centre de recherche sur les matériaux auto-assemblés, Eisai, Fondation Barré, Merck Frosst, Servier, Shire BioChem. Les conférenciers prestigieux invités, dans le cadre des grandes conférences, offrent à la communauté scientifique montréalaise les meilleures présentations dans les différents domaines de pointe de la chimie.