

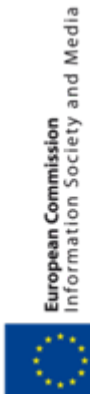
# High birefringent liquid crystalline materials for EO applications

**Stanisław J. Kłosowicz**

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*An event organised by the European Commission (DG INFSO)  
& the South Korean Ministry of Knowledge Economy (MKE)*

*December 1-2, 2008  
Radisson SAS Royal Hotel  
Brussels, Belgium*



- Faculty consist of two Institutes: Chemistry and Applied Physics and the Chair of Advanced Materials & Technologies
- Liquid crystal group: 5 full professors, 3 associate professors, 8 PhDs, 7 PhD students, 6 technicians
- Scope: synthesis of new LC compounds, design and preparation of LC mixtures, studies of properties LC materials, design of EO elements
- Several thousand of mesogens and LC mixtures: discovery and characterization of isothiobenzoates and orthoconic antiferroelectric smectics
- Also polymer based elastic LC composites

Material support: ***New LC mixtures with high birefringence***  
tailored for:

## EO devices

- spatial light modulators
- fast light shutters
- IR laser beam steering
- IR dynamic science projector
- Cholesteric lasers
- tunable focus lenses
- telecom variable optical attenuators

## Displays

fast operating color sequential LCDs

for example

- using blinking backlight or LEDc  
 $d=1.6-1.2 \mu\text{m}$ ,  $\Delta n=0.3-0.4$ ,  $\tau_{\text{on}}$  and  $\tau_{\text{off}} < 5 \text{ ms}$
- or OCB

Elastic binders or substrata



**Thank you for your attention!**

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Experience	<p>Liquid crystals synthesis &amp; characterization</p> <p>Optical devices containing liquid crystals</p> <p>Liquid crystal composites</p> <p>Medical applications of liquid crystals</p> <p>Sol-gel method of glass preparation</p>		
	<p>130 publications</p> <p>1 book</p> <p>4 times visiting professor</p>		

