

## Posudek oponenta diplomové práce

Student: **Bc. Katsiaryna Kashtalyan**  
Téma práce: **Správa barev pro oblast termochromních barev**

Bodové ohodnocení práce na základě jednotlivých kritérií:

	(max. 5)
přiměřenost rozsahu	5
využití odborné literatury vztahující se k zadanému tématu	4
adekvátnost použitých experimentálních postupů	5
zpracování výsledků	5
vyvození závěrů, příp. navržení dalšího postupu	5
logická stavba práce, provázanost textu s obrázky, tabulkami apod.	3
citace literatury	5
jazyková úroveň	5
grafická úprava a přehlednost	5
prezentace dat	4
kvalita obrázků	5

Dílčí hodnocení: *výborně*

Slovní hodnocení zaměřené na splnění jednotlivých cílů, přínos práce a její celkovou úroveň:

The thesis present a highly interesting study involving a very significant topic with a large practical application potential. A more extensive penetration of thermochromic security elements into the packaging industry would certainly result into an increased consumer confidence and better intellectual property holder protection against fraud.

I find the scope of both theoretical as well as practical parts of the thesis to be adequate, all relevant issues are included. References including recent research papers as well as respected monographies were sensibly selected and properly cited. The experimental part is reasonably planned providing useful results, which are neatly presented, logically discussed and correctly concluded.

I have minor objections with respect to the thesis formal structure and content: I miss explicit statement of the thesis objectives (they are mentioned in the abstract and then discussed in conclusion). The theoretical part contains rather too small number of figures and explanatory schemes. For example, the hysteresis loop described on page 32 would certainly deserve a corresponding figure. Including more figures would certainly make the thesis more accesible for the reader. Moreover, as a chemist, I find the description of the thermochromic pigments structure too short and vague. I understand this may be caused by the technology oriented focus of the thesis, but again at least a few more figures would improve the overall impression. A few more pages describing the principles of used measuring techniques would be also welcome.

I was very happy with the language, the thesis was a pleasure to read. Also the page layout and text formatting was pleasing.

Inspite of my minor objections and comments, I find the thesis to be a very valuable piece of work and generally succesfull in fulfilling the assignment.

Otázky pro obhajobu:

I would like to place the following questions, comments and discussion topics:

Page 13: Please explain how the negative parts of r-, g-, b- color matching functions are avoided. What is the key principle enabling the creation of all-positive x-, y- and z- color matching functions from the original r-, g-, b-?

Page 31: If a radiation dose is reported in kJ/m<sup>2</sup>, then the involved spectral regions should be explicitly specified.

Which spectral regions are ment in this particular case? UV only, or

UV+VIS?

Page 32: Is there any explanation or theory suggested for the explanation of hysteresis behaviour of thermochromic inks?

Page 39: Color management engine may have significant influence on the result of color transformation. Based on your experience, how do you view its role in this particular case.

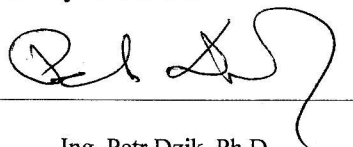
Do you expect to get identical results with other engine?

Page 58: The description of subjective evaluation methodology is not explicit. Did only the author evaluate the visual appearance of the studied test charts or were more evaluators included? Since the color TC ink change is rather subtle, a more populated and mixed genre observer group may reveal some interesting data about the actual perception and functionality of the TC patterns.

Celkové hodnocení:

**Závěrečná práce Bc. Katsiaryny Kashtalyan splňuje zadání,  
doporučuji ji k obhajobě a navrhuji klasifikovat stupněm výborně-m.**

V Brně dne 26. května



Ing. Petr Dzik, Ph.D.