

Re: color calibration of microscopic images

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In article <uarbk0do1lqiknbec78fbvk1e45ni7p8tu@4ax.com>, Aaron <nghy@comcast.net> writes

Beatrice,

Reading Aaron's post below was interesting. It was therefore quite a coincidence when I received yesterday the latest Queckett Society Bulletin. This has a report – about 3 pages – of various presentations about microspectroscopes.

Don't get too excited – the instruments described were mostly antiques – but there were also a lot of (old) references given, and it is possible that the authors themselves might know more if you approached them. The instruments were mostly designed to fit in the eyepiece tube of a conventional microscope and were used for measuring the reflection or transmission spectra of such things as gems, minerals and biological tissue.

I'm sure there must be some more modern instruments – and maybe the ones Aaron describes below are indeed those. Just thought you might be interested to look at the Bulletin.

If you can't get hold of a copy, e-mail me off-list (replace "nospam" with "dlittlewood").

Sorry for leaving Aaron's post untrimmed below – that way it goes into my archive!

Regards,

David

>

>>So, if I understand you, you prefer a tristimulus colorimeter because:

>>1 – I would have directly color coordinates in a CIELab or similar

>>space.

>

>That is correct. If this meter cannot provide directly in the

sci.techniques.microscopy: Re: color calibration of microscopic images

>coordinates that you want the coordinates should be convertible to
>others. This unit comes with Software and cables to hook up to a
>computer. I have seen the software on the web for trial examination..
>
>>2 – since the colorimeter has his own illumination source (if I
>>understand correctly), I would not have to rely on the microscope
>>light source whose characteristics are not well known.
>
>This colorimeter does not have a light source of its own. I
>envisioned that it could be attached to the microscope to substitute
>for the camera.. This colorimeter is dsigned to read luminous sources
>like traffic lights or other colored illumination. You would
>calibrate this instrument just as you would perform a white balance
>with the camera.
>
> You could also imcorporate this instrument onto a copy stand which
>might provide the lighting.
>
>>About the first point, couldn't I just convert my RGB readings to
>>CIELab values (which is what I was planning to do after calibration)
>>without necessarily using a colorimeter?
>
>The colorimeter is desinged for this work. For the camera yours is
>
>Each digital color device has a gamut of col9ors it can produce and
>that gamut is not consistent from one device to another. I think you
>will be asking far more of the camera system than it was designed to
>provide. The use of the colorimeter will avoid a complex analysis of
>the camera performance which may ultimately show the camera's
>shortcommings in this non standard application. .
>
>>What is not clear to me is whether such colorimeters make
>>spatially–resolved measurements. If not, then I can't use them.
>
>The meter reads the colors directly and provides the numbers. I am
>afraid you will never be able to obtain the same measurements using
>the camera and making calculations. You will have to investigate the
>specifications of any colorimeter that you might consider to see if
>that instrument provides the measurments that you require.. The
>CS–100a is not the only instrument availble. .
>
>>Please correct me if I am wrong.
>
>Again I repeat that I an not using this colorimeter presently and it
>has been some years since I was involved in color work. At that time
>I learned that workers, even experienced workers. had trouble
>remerbering colors or understanding how the colors changed with the
>addition of the colorants. I obtained a Hunter Colorimeter to study
>the colors and how small changes in the colorants changed the end
>product. Untimately the colorimeter was used in the quality control
>area to make recommendations on the additives. While this did not

sci.techniques.microscopy: Re: color calibration of microscopic images

>lead to perfect color matches by eye, the range of colors produced
>became much smaller and had a random statistical variation that was
>far more acceptable.

>

>I do not know if this particular colorimeter is the one for you. It
>seemed to have characteristics that would be very useful for your
>application.. However, I am at the limit of what I can offer as help.
>You need to contact vendors and see if you can borrow some units to
>determin if this is an avenue.for you..

>

>Good Luck

>Aaron

>>

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>>Beatrice

>

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David Littlewood