Subject: Optics simulation with IDL?
Posted by karri on Thu, 17 May 2001 09:52:28 GMT
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Hi guys,

Does IDL have functions for visualizing how light travels through some
transparent plastic objects?

--
Cheers,

Karri Kaksonen

Subject: Re: Optics simulation with IDL?
Posted by Pavel A. Romashkin on Mon, 21 May 2001 15:33:06 GMT
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karri wrote:
>
> My problem is that I have made a light guide to transfer the light from 5
> leds to the front panel of a box. In this array the light leaks a lot from
> one light guide to the other. I tried to fix this by putting opaque
> material all around the guides but this approach reduced the intensity a
> _lot_.

Instead of using either language to simulate the case, mount the LEDs
right onto the front panel of the box. This will save a lot of time.

Cheers,
Pavel

Subject: Re: Optics simulation with IDL?
Posted by karri on Mon, 21 May 2001 20:31:08 GMT
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On Mon, 21 May 2001, Pavel A. Romashkin wrote:

> karri wrote:
>>
>> My problem is that I have made a light guide to transfer the light from 5
>> leds to the front panel of a box. In this array the light leaks a lot from
>> one light guide to the other. I tried to fix this by putting opaque
>> material all around the guides but this approach reduced the intensity a
>> _lot_.

>
> Instead of using either language to simulate the case, mount the LEDs
> right onto the front panel of the box. This will save a lot of time.
>
> Cheers,
> Pavel

That has actually passed my mind more than once...

It is just that the box designer wants to have oval blue light sources
spread out on a parabolic path around a front panel that only has curved
surfaces.

Not flat green or red light sources in a straight row as I would make it.

--
Karri

Subject: Re: Optics simulation with IDL?
Posted by Jaco van Gorkom on Mon, 21 May 2001 21:20:35 GMT
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karri wrote:
> On Mon, 21 May 2001, Pavel A. Romashkin wrote:
>> karri wrote:
>>>
>>> My problem is that I have made a light guide to transfer the light from 5
>>> leds to the front panel of a box. In this array the light leaks a lot from
>>> one light guide to the other. I tried to fix this by putting opaque
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>>
> ... It is just that the box designer wants to have oval blue light sources
> spread out on a parabolic path around a front panel that only has curved
> surfaces.
>
> Not flat green or red light sources in a straight row as I would make it.

Just your luck again:)

For optics simulation, go for some optics package. I have no experience
there though.

For your problem, I'd glue five blue leds to the inside of this flashy front

panel. Or alternatively, try covering the guides with reflective material.
Standard household aluminum foil should do for testing, and comes a lot
cheaper, easier and faster than IDL.

Have fun,
Jaco

Subject: Re: Optics simulation with IDL?
Posted by karri on Tue, 22 May 2001 05:37:38 GMT
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On Mon, 21 May 2001, Jaco van Gorkom wrote:
> karri wrote:
>> On Mon, 21 May 2001, Pavel A. Romashkin wrote:
>>> karri wrote:
>>>> My problem is that I have made a light guide to transfer the light from 5
>>>> leds to the front panel of a box. In this array the light leaks a lot from
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>>
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>
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> there though.
>
> For your problem, I'd glue five blue leds ...

Thanks for all who replied. I fell for the solution to spend a few days
making prototypes and then I just choose the best one. Sorry for bothering
everybody.

--
Cheers,

Karri Kaksonen

Subject: Re: Optics simulation with IDL?

Posted by dmarshall on Tue, 22 May 2001 14:31:17 GMT
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The light guides operate on the principle of total internal reflection
which
necessitates that the light-carrying core have a higher index of refraction
than the outside cladding (for simple plexiglass/perspex the "cladding" is
air). This is why covering it made the transmittance go down. Also the
guide should be as straight as possible or bends being gradual instead of
sharp.

Dave.

In article <3B0986A3.E97827AE@fz-juelich.de>, Jaco van Gorkom
<j.c.van.gorkom@fz-juelich.de> writes:
> karri wrote:
>> On Mon, 21 May 2001, Pavel A. Romashkin wrote:
>>> karri wrote:
>>>>
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> panel. Or alternatively, try covering the guides with reflective material.
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> cheaper, easier and faster than IDL.
>
> Have fun,
> Jaco