High Resolution Full Color Integrated Semiconductor Display

It is known that by illuminating rare-earth materials, with invisible infrared light, reradiated light at specific visible wavelengths (or colors) is possible. This process, known as frequency up-conversion, has been applied to many technologies and now researchers at UCF have taken this interesting physical result and applied it to high resolution display. Using semiconductor device fabrication and multiple color up-converting particles, the invention described herein enables an integrated display pixel of red, blue, and green of a size on the order of infrared wavelengths (10s of microns). The ability to produce and control pixels this small enables full color display at a very high resolution and with a high degree of control.

Invention
The invention represents the design and apparatus for producing a high resolution, full color, high brightness and fully integrated visible light emitting device as applied to displays. This technology makes use of frequency up-converting particles to create micron scale red, blue, and green sources from IR integrated sources [U.S. Patent 7,471,706].

Lead Inventor
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Advantages:
• Offers fully integrated display control.
• Solid state laser sources result in high brightness and fine resolution

Applications:
• Display
• Medical devices
• Defense
• Entertainment

If you or your company are interested in this opportunity, Contact:
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