Integrating Color Displays

Electroluminescence occurs when carriers are injected into wide band-gap semiconductors such as gallium nitride (GaN) and excite light-emitting centers. The wavelength of the emitted light can be controlled with rare earth dopants, and thus there is considerable effort being made toward developing these materials for large-area flat-panel displays. Wang et al. introduce a processing route involving several steps of deposition and patterning in which a lift-off technique is used, with liquid glass as the sacrificial layer at each step. Their process is compatible with the high-temperature growth of the GaN layers and conventional wet-processing techniques. They demonstrate the fabrication of laterally patterned red-, green-, and blue-emitting regions on a single substrate. — ISO