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The quest of alternative light sources is one of the most important research aspects in the light of the imminent energy crisis. One promising technology are organic light-emitting diodes (OLEDs), where an organic material is sandwiched as emitter between two electrodes. Using polymers combines the low power consumption with the advantages of plastic. Cost-effective wet-deposition techniques, such as printing, can be used for production.

Multilayer structures allow for higher efficiencies, but fabrication from solution is challenging as deposited layers dissolve when depositing further layers.

This work is an important step towards cost-effective alternative light sources:

(a) *Solution-processed multilayer structures are realized by new crosslinking strategies (to yield insoluble layers) that improve device performance and facilitate OLED production.*

(b) *Multilayer white-emitting polymeric OLEDs are investigated and optimized in terms of high efficiencies and good colour characteristics.*

(c) *A general method to control the large colour shifts in polymeric OLEDs was developed.*