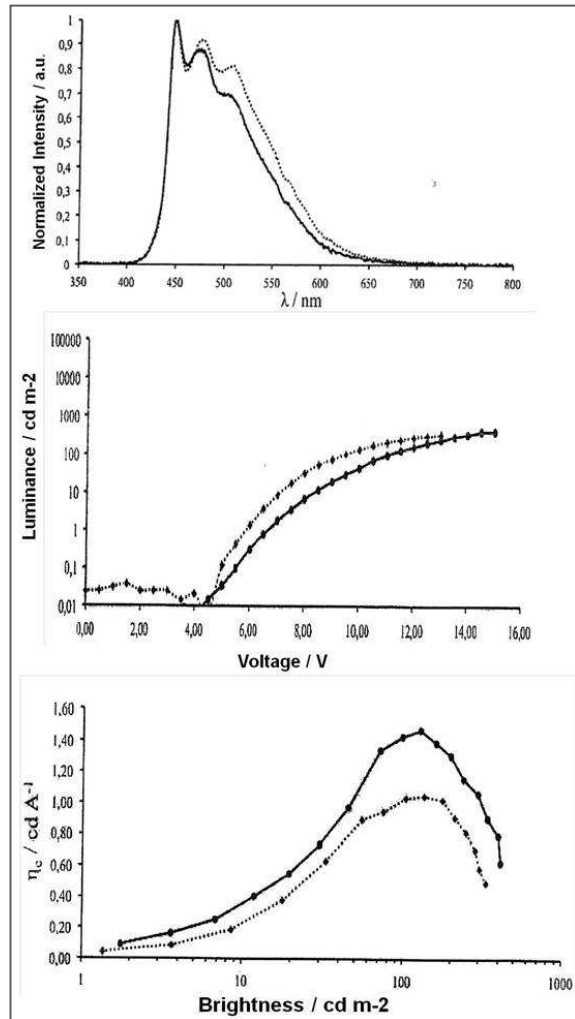


# P-PHOS

## Highly Efficient Triplet Emitter for OLED Applications

### Invention

Scientists of the Westfälische-Wilhelms University Muenster and Sensient developed dopants for Organic Light Emitting Diodes (OLED). The tri and bi-dental platinum (II) complexes with phosphite or dianionic NNC/NNN ligands are triplet emitters with excellent quantum efficiencies.



OLEDs consist of electro-luminescent substances, embedded in a polymer matrix. To emit exzitones, an electric current, triggered energy transfer is needed. Useful electroluminescent dopants are metal complexes like platinum complexes. The quantum efficiencies depend on the electronic behavior of the ligands used.

Therefore useful and efficient substances like P-Phos are required.

### Commercial Opportunities

P-Phos was a result of the project So-Light, supported by the German Ministry of Education and Research (BMBF), which addressed the entire value chain, from primary OLED materials to OLED-lighting applications.

P-Phos is available through a convenient and efficient, high yield synthesis. Processed in vacuum and even in a non optimized setting, used as triplet emitters, P-Phos enabled outstanding high quantum efficiencies of up to 75% (for green) and high current efficiencies of up to 16cd/A (green-yellow color).

### Current Status

Patent applications have been filed at the German Patent and Trademark Office (DE 102011001007A1) and the European Patent Office (PCT/EP2013/067923). Further international applications are still possible.

An invention of Westfaelische Wilhelms University Muenster (UniMuenster).

### Competitive Advantages

- High quantum efficiencies up to 75%
- High current efficiencies up to 16cd/A
- Lab prototype
- Patented
- Economic Synthesis of the complex

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