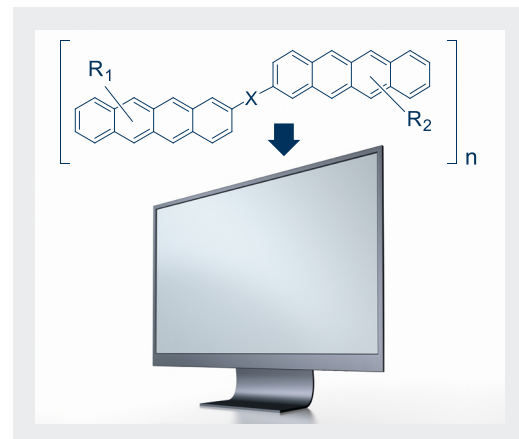


# Production and Application of Organic Semiconductors\*

## The innovation

The producing of displays and TV/PC screens from polymers has been pursued by many companies for years. Organic semiconductors are mainly used to implement this new production technique. However, vulnerability of the organic semiconductors such as pentacene to oxidation, which at present can only be prevented by complex "encapsulation", currently limits their usability. Supplemental, cost-intensive processes increase manufacturing costs and reduce the attractiveness of organic semiconductors in many applications.

The innovation being presented makes it possible to manufacture and use tetracene derivatives as organic semiconductors. The derivatives are straightforward available in the required quantities. The semiconductor properties of the required compounds can be adapted to the respective application by a new synthesis route. Electronic components such as OFETs, which can be manufactured in a cost-effective manner on the basis of this technology, are not susceptible to oxidation, and can be used in a whole variety of applications.



## Advantages at a glance

- Easy accessibility to tetracene compounds and a combination of different derivatives for targeted optimisation of the semiconductor properties is possible
- Reduced sensitivity to oxidation compared to existing organic semiconductors
- Very good conductivity properties (comparable to the unstable pentacenes)

## Keywords

- OFET
- OLED
- Organic displays
- Active matrix for display manufacture

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## Areas of application

- Manufacture of electronic components
- Backplanes for E-Paper
- Manufacture of organic, pliable displays

## Patent status

The invention is filed internationally. It is owned by Dritte Patentportfolio Beteiligungsgesellschaft mbH & Co. KG. The application was filed in June 2005.



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