

CV Karl Leo



1. General Information

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| Title, first name, surname | Prof. Dr. rer. nat. Dr. techn. h.c. Karl Leo |
| Date/place of birth | 10.07.1960 / Freiburg i. Brsg. |
| Actual position or status | Professor W3 |
| Address | Technische Universität Dresden Dresden Integrated Center for Applied Physics and Photonic Materials (IAPP) and Institut für Angewandte Physik D- 01062 Dresden |
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2. Academic Education with Degree

| Field of study | period/year | University | Degree | Thesis supervisor |
|----------------|-------------|----------------------|-------------|-------------------|
| Physik | 1980-1985 | Universität Freiburg | Dipl.-Phys. | Adolf Goetzberger |

3. Scientific Degrees (Dr./PhD, habil, others)

| Degree | Field | University | Date | Thesis supervisor |
|---------------|--------|-----------------------|------|-------------------|
| Dr. rer. nat. | Physik | Universität Stuttgart | 1988 | Hans Queisser |
| Privatdozent | Physik | RWTH Aachen | 1993 | Heinrich Kurz |

4. Professional Career after Graduation

| Period | Position | Affiliation |
|----------------|--|---|
| 10/2013-9/2014 | Visiting Professor | King Abdullah University of Science and Technology, Thuwal, Saudi-Arabia |
| 2001-2013 | 2001-2008 Department Head, 2008-2013 Director | Fraunhofer Institute for Photonic Microsystems/since 2012 Fraunhofer COMEDD |
| Since 1993 | Full Professor of Optoelectronics | Technische Universität Dresden |
| 1991-1993 | Assistant Professor | RWTH Aachen |
| 1989-1991 | Postdoc | AT&T Bell Laboratories, Holmdel, NJ, USA |
| 1986-1988 | Research Associate | Max-Planck-Institut für Festkörperforschung, Stuttgart |

5. Other Functions

| Period/year | Description |
|-------------|---|
| 2015- | Board Member of the Excellence Network "Center for Advancing Electronics Dresden (cfaed)" |
| 2009-2011 | Director, Network "Organic Electronics Saxony" www.oes-net.de |
| 2009-2012 | Chair and Organizer, Plastic Electronics Conference, Dresden |
| 2009 | Visiting Professor, Institute for Materials Research, Tohoku University, Sendai, Japan |
| 2008-2014 | Member of the Board of Heliatek GmbH, Dresden |
| Since 2008 | Member of the Board of sim4tec GmbH, Dresden |
| 2008-2015 | Coordinator of DFG priority programme "Organic Photovoltaics" SPP1355 |
| 2008 | Chair and Organizer, International Conference on Organic Electroluminescence, Dresden |
| 2003-2009 | Member and (2003-2006) Chair of Supervisory Board of Novaled AG, Dresden |
| Since 1999 | Co-founder of 8 spin-off companies, >300 employees, >140M€ raised |

6. Honors and Awards

| Year | Description |
|-----------|--|
| 2017 | Wilhelm-Ostwald-Medaille of the Saxonian Academy of Sciences |
| 2016 | Technology Transfer Prize of the Deutsche Physikalische Gesellschaft (DPG) |
| 2015 | Fellow of the Optical Society of America (OSA) |
| 2015/2016 | ISI "Highly Cited" Scientist in Materials Sciences |
| 2015 | Fellow of the Canadian Institute for Advanced Research (CIFAR) |
| 2014 | Election into the European Academy of Sciences (EURASC) |
| 2014 | Hector-Prize and Fellow, Hector Foundation |
| 2013 | Dr. techn. h.c., University of Southern Denmark |
| 2012 | Rudolf-Jaeckel-Preis of the German Society for Vacuum |
| 2011 | Future Prize of the German President |
| 2010 | ERC Advanced Grant |
| 2006 | Manfred-von-Ardenne-Preis, Europäische Fördergemeinschaft Dünne Schichten |
| 2003 | Election into the Leopoldina, National Academy of Sciences |
| 2002 | Gottfried-Wilhelm-Leibniz-Preis of the Deutsche Forschungsgemeinschaft |
| 2002 | Academy Prize of Berlin-Brandenburg Academy of Science |
| 1992 | Bennigsen-Förder award of the state Nordrhein-Westfalen |
| 1988 | Otto-Hahn-Medaille of the Max-Planck-Society |

7. Publications

Performance factors

- H-factor: 100 (Google Scholar), 84 (Web of Science); m-factor: 3.1 (Google)
- Citations: > 42,000 (Google Scholar), > 29,000 (Web of Science)
- > 650 refereed publications

Ten recent selected publications

1. Elementary steps in electrical doping of organic semiconductors, M.L. Tietze, J. Benduhn, P. Pahner, B. Nell, M. Schwarze, M. Krammer, K. Zojer, K. Vandewal, and K. Leo, Nature Comm. **9**, 1182 (2018)
2. Organic narrowband near-infrared photodetectors based on intermolecular charge-transfer absorption, B. Siegmund, A. Mischok, J. Benduhn, O. Zeika, S. Ullbrich, F. Nehm, M. Böhm, D. Spoltore, H. Fröb, C. Körner, K. Leo and K. Vandewal, Nature Comm. **8**, 15421 (2017)
3. Band structure engineering in organic semiconductors, M. Schwarze, W. Tress, B.

- Beyer, F. Gao, R. Scholz, C. Poelking, K. Ortstein, A.A. Guenther, D. Kasemann, D. Andrienko, K. Leo, *Science* **352**, 1446 (2016).
4. Impact of mesoscale order on open-circuit voltage in organic solar cells, C. Poelking, M. Tietze, C. Elschner, S. Olthof, D. Hertel, B. Baumeier, F. Würthner, K. Meerholz, K. Leo, and D. Andrienko, *Nature Materials* **14**, 434 (2015).
 5. Characterization of tandem organic solar cells, R. Timmreck, T. Meyer, J. Gilot, H. Seifert, T. Mueller, A. Furlan, M.M. Wienk, D. Wynands, J. Hohl-Ebinger, W. Warta, R.A.J. Janssen, M. Riede, K. Leo, *Nature Photonics* **9**, 478 (2015).
 6. Doped Organic Transistors: Inversion and Depletion Regime, B. Lüssem, M.L. Tietze, H. Kleemann, C. Hoßbach, J.W. Bartha, A. Zakhidov, K. Leo, *Nature Comm.* **4**, 2775 (2013).
 7. Correlation of π -Conjugated Oligomer Structure with Film Morphology and Organic Solar Cell Performance, R. Fitzner, E. Mena-Osteritz, A. Mishra, G. Schulz, E. Reinold, M. Weil, C. Körner, H. Ziehlke, C. Elschner, K. Leo, M. Riede, M. Pfeiffer, C. Urich, P. Bäuerle, *J. Am.Chem.Soc.* **134**, 11064 (2012).
 8. Phase-locked coherent modes in a patterned metal-organic microcavity, R. Brückner, A. Zakhidov, R. Scholz, M. Sudzius, S.I. Hintschich, H. Fröb, V.G. Lyssenko, K. Leo, *Nature Photonics* **6**, 322–326 (2012).
 9. Highly conductive PEDOT: PSS electrode with optimized solvent and thermal post-treatment for ITO-free organic solar cells; Y.H. Kim, C. Sachse, M.L. Machala, C. May, L. Müller-Meskamp, K. Leo, *Advanced Functional Materials* **21**, 1076 (2011).
 10. White organic light-emitting diodes with fluorescent tube efficiency, S. Reineke, F. Lindner, N. Seidler, G. Schwartz, K. Walzer, B. Lüssem, K. Leo, *Nature* **459**, 234 (2009).

Patents

(co-) inventor of approx. 50 patent families, major part of them licensed or sold to companies