

## CV Karl Leo



### 1. General Information

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 Novald 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-Jaekel-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: 91 (Google Scholar), 78 (Web of Science); m-factor: 2.8 (Google)
- Citations: > 37,000 (Google Scholar), >26,000 (Web of Science)
- > 650 refereed publications

### Ten recent selected publications

1. 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).
2. 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).
3. 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).
4. Highly efficient organic multi-junction solar cells with a thiophene based donor material, R. Meerheim, C. Körner, K. Leo, *Applied Physics Letters* **105**, 063306 (2014).
  5. 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).
  6. Correlation of  $\pi$ -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).
  7. 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).
  8. 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).
  9. 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).
  10. Highly efficient organic devices based on electrically doped transport layers, K. Walzer, B. Maennig, M. Pfeiffer, K. Leo, *Chemical Reviews* **107**, 1233 (2007).

### **Patents**

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