**Prof. Rainer Adelung**

Chair for Functional Nanomaterials, Faculty of Engineering, CAU Kiel

Born 15th March 1971 in Detmold, Germany

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| **Education** | 1991 | Abitur, Kieler Gelehrtenschule, Kiel, Germany |
|  | 1991 - 1996 | Student at CAU Kiel, Germany, Diploma in Physics (on surface photo-voltage effect) |
|  | 2000 | PhD in Physics on nanowires and layered crystals |
|  | 2006 | Habilitation and venia legend at CAU Kiel, Faculty of Engineering, Germany |
| **Appointments** | 1996 - 2001 | Scientist at the Institute for Experimental and Applied Physics at the CAU Kiel, Germany |
|  | 2001 - 2002 | Postdoctoral fellow and research assistant at the Case Western Reserve University in Cleveland, USA |
|  | 2002 - 2007 | Group leader at the Chair for Multicomponent Materials at the Faculty of Engineering, CAU Kiel, Germany |
|  | 2007 - 2010 | Professor (W2) (Heisenberg) for Functional Nanomaterials at the Faculty of Engineering, CAU Kiel, Germany |
|  | Since 2010 | Professor (W3) Head of Chair for Functional Materials,  Faculty of Engineering, CAU Kiel, Germany |
| Awards | 2001 | Award for the best PhD-thesis in the year 2000 in the Faculty of Mathematics and Natural Sciences, CAU Kiel, Germany |
|  | 2001 | Feodor-Lynen fellowship award from the Alexander von Humboldt Foundation |
|  | 2007 | Heisenberg-Professorship grant by the DFG |
|  | 2010 | Offer of a W3 Professorship at the TU Hamburg-Harburg |
|  | 2017 | Dimitrie Cantemir Medal of the Academy of Sciences of Moldova |
| **Functions** | 2013-2019 | Speaker of the University Research Focus Kiel Nano, Surface and Interface Science (KiNSIS) |
|  | Since 2019 | Managing director of the institute for Material Science at the faculty of engineering of the Kiel University |
|  | Since 2020 | Spokesperson of the DFG Research Training Group RTG 2154 Materials for Brain:  Thin film functional materials for minimally invasive therapy of brain diseases. |
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| **Research Areas** | Functional nanomaterials, porous materials, sensors, and nanodevices | |
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| 1. | Schütt, F., Zapf, M., Signetti, S., Strobel, J., Krüger, H., Röder, R.,Carstensen, J., Wolff, N., Marx, J., Carey, T., Schweichel, M., Terasa, M.I., Siebert, L. Hong, H.-K., Kaps, S. Fiedler, B., Mishra, Y. K., Lee, Z., Pugno N. M., Kienle, L., Ferrari, A. C. , Torrisi, F., Ronning C., **Adelung, R.**: Conversionless efficient and broadband laser light diffusers for high brightness illumination applications. Nature Comm. **11**, (2020) 1437. |
| 2. | Mishra, Y. K., **Adelung R.**: ZnO tetrapod materials for functional applications, Materials Today **21** (2018) 631. |
| 3. | Schütt, F.; Signetti, S.; Krüger, H.; Röder, S.; Smazna, D.; Kaps, S.; Gorb, S. N.; Mishra, Y.K.; Pugno, N.M.; **Adelung, R.**: Hierarchical self-entangled carbon nanotube tube networks, Nature Comm. **8** (2017) 1215. |
| 4. | Baytekin-Gerngross, M.; Gerngross, M. D.; Carstensen, J. and **Adelung, R.**: Making metal surfaces strong, resistant, and multifunctional by nanoscale-sculpturing, Nanoscale Horizons **1** (2016) 467-472. |
| 5. | Gedamu, D.; Paulowicz, I.; Kaps, S.; Lupan, O.; Wille, S.; Haidarschin, G.; Mishra, Y. K. and **Adelung, R.**: Rapid fabrication technique for interpenetrated ZnO nanotetrapod networks for fast UV sensors, Adv. Mater., **26** (2014) 1541-1550. |
| 6. | Jin, X.; Strueben, J.; Heepe, L.; Kovalev, A.; Mishra, Y. K.; **Adelung, R.**; Gorb, S. N. and Staubitz, A.: Joining the Un-Joinable: Adhesion Between Low Surface Energy Polymers Using Tetrapodal ZnO Linkers, Adv. Mater., **24** (2012) 5676. |
| 7. | Mecklenburg, M.; Schuchardt, A.; Mishra, Y. K.; Kaps, S.; **Adelung, R.**; Lotnyk, A., Kienle, L. and Schulte, K.: Aerographite: ultra lightweight, flexible nanowall, carbon microtube material with outstanding mechanical performance, Adv. Mater. **24** (2012) 3486. |
| 8. | Elbahri, M.; Paretkar, D.; Hirmas, K.; Jebril, S. and **Adelung, R.**: Anti-Lotus Effect for Nanostructuring at the Leidenfrost Temperature, Adv. Mater. **19** (2007) 1262. |
| 9. | **Adelung, R.**; Aktas, O. C.; Franc, J.; Biswas, A.; Kunz, R.; Elbahri, M.; Kanzow, J.; Schürmann, U. and Faupel, F.: Strain Controlled Growth of Nanowires within thin Film Cracks, Nature Mater. **3** (2004) 375. |
| 10. | Kipp, L.; Skibowski, M.; Johnson, R. L.; Berndt, R.; **Adelung, R.**; Harm, S. and Seemann, R.: Sharper Images by Focussing Soft X-Rays with Photon Sieves, Nature **414** (2001) 184. |

**Prof. Dr. Rainer Adelung**

Rainer Adelung is Professor at the Chair for Functional Nanomaterials in the institute for materials science at the Faculty of Engineering of the Kiel University (CAU Kiel), Germany. Prior to this appointment at CAU, he was leading a scientifically independent research group from 2002 to 2007 at the Chair for Multicomponent Materials at the Faculty of Engineering, CAU Kiel, Germany, that focused on Nanotechnology. From 2001 to 2002 he worked as Postdoctoral fellow and research assistant at the Case Western Reserve University in Cleveland, USA. In 2000 he received his PhD in Physics from the Faculty of Mathematics and Natural Sciences, CAU Kiel, Germany (award for the best PhD-thesis in the year 2000).

His representative work includes various nanostructures, mainly on the synthesis and design of porous materials, nanostructured surfaces and nanowires. Applications range from energy technology like batteries and supercapacitors to sensor devices and antiviral agents towards advanced adhesion technology in engineering technology. From 2013-2019 he was the spokespersons of the University focus on nano surface and interface science. Currently, he is speaker of the DFG Research Training Group RTG 2154 Materials for Brain: Thin film functional materials for minimally invasive therapy of brain diseases.