

## Patent and publication list Dr. rer. nat. Alexander Franke (as of Jan. 2016)

### Patents

#### 2016

M. Gerhold, A. Franke, R. Kirste, D. Alden, Z. Sitar, R. Collazo, “*Monolithic micro-pillar photonic cavities based on III-nitrides materials*”, U.S. patent disclosure, Jan. 2016

### Publications

#### 2016

- [18] F. Kaess, P. Reddy, D. Alden, A. Klump, L.H. Hernandez-Balderrama, A. Franke, R. Kirste, A. Hoffmann, R. Collazo, Z. Sitar, “*The Effect of Illumination Power Density on Carbon Defect Configuration in Silicon doped GaN*”, Journal of Applied Physics 120, 235705 (2016)
- [17] N. Berg, A. Franke, R. Kirste, R. Collazo, A. Ivanisevic, “*Photoluminescence Changes of III-Nitride lateral Polarity Structures after Chemical Functionalization*”, Materials Research Express 3, 12 (2016)
- [16] A. Franke, M.P. Hoffmann, R. Kirste, M. Bobea, J. Tweedie, F. Kaess, M. Gerhold, R. Collazo, Z. Sitar, “*High reflectivity III-nitride UV-C distributed Bragg reflectors for vertical cavity emitting lasers*”, Journal of Applied Physics, 120, 13, 135703 (2016)
- [15] F. Kaess, S. Mita, J. Xie, P. Reddy, A. Klump, L.H. Hernandez-Balderrama, S. Washiyama, A. Franke, R. Kirste, A. Hoffmann, R. Collazo, Z. Sitar, “*Correlation between mobility collapse and carbon impurities in Si-doped GaN grown by low pressure metalorganic chemical vapor deposition*”, Journal of Applied Physics, 120, 10, 105701, (2016)
- [14] D. Alden, W. Guo, R. Kirste, F. Kaess, I. Bryan, T. Troha, A. Bagal, P. Reddy, L.H. Hernandez-Balderrama, A. Franke, S. Mita, C-H. Chang, A. Hoffmann, M. Zgonik, R. Collazo, Z. Sitar, “*Fabrication and structural properties of AlN submicron periodic lateral polar structures and waveguides for UV-C applications*”, Applied Physics Letters, 108, 26, 261106, (2016)
- [13] P. Reddy, S. Washiyama, F. Kaess, M. H. Breckenridge, L.H. Hernandez-Balderrama, B.B. Haidet, D. Alden, A. Franke, B. Sarkar, E. Kohn, R. Collazo, Z. Sitar, “*High temperature and low pressure chemical vapor phase deposition of silicon nitride on AlGaIn: Band offsets and passivation studies*”, Journal of Applied Physics, 119, 14, 145702, (2016)
- [12] A. Franke, M.P. Hoffmann, L. Hernandez-Balderrama, F. Kaess, I. Bryan, S. Washiyama, M. Bobea, J. Tweedie, R. Kirste, M. Gerhold, R. Collazo, Z. Sitar, “*Strain engineered high reflectivity DBRs in the deep UV*”, Proc. SPIE 9748, (2016)
- [11] F. Güell, P.R. Martínez-Alanis, S. Khachadorian, R.R. Zamani, A. Franke, A. Hoffmann, M.R. Wagner, G. Santana, “*Spatially controlled growth of highly crystalline ZnO nanowires by an inkjet-printing catalyst-free method*”, Materials Research Express, 3, 4, 025010, (2016)
- [10] F. Güell, P.R. Martinez-Alanis, S. Khachadorian, J. Rubio-Garcia, A. Franke, A. Hoffmann, G. Santana, “*Raman and photoluminescence properties of ZnO nanowires grown by a catalyst-free vapor-transport process using ZnO nanoparticle seeds*”, Phys. Status Solidi B 253, 5, 883-888, (2016)

## 2015

- [9] A. Majkić, U. Puc, A. Franke, R. Kirste, R. Collazo, Z. Sitar, M. Zgonik, “*Optical properties of aluminium nitride single crystal in the THz region*”, Optical Materials Express, 5, 10, 2106-2111, (2015)
- [8] S. Okur, A. Franke, F. Zhang, V. Avrutin, H. Morcoco, F. Bertram, J. Christen, Ü. Özgür, “*Strong exciton-photon coupling in hybrid InGaN-based microcavities on GaN substrate*”, Proc. SPIE; 9363, (2015)

## 2013

- [7] S. Okur, R. Shimada, F. Zhang, S.D.A. Hafiz, J. Lee, V. Avrutin, Ü. Özgür, H. Morkoç, **A. Franke**, F. Bertram, and J. Christen, “*GaN-Based Vertical Cavities with All Dielectric Reflectors by Epitaxial Lateral Overgrowth*”, Japanese Journal of Applied Physics 52, 08JH03 (2013)

## 2012

- [6] **A. Franke**, B. Bastek, S. Sterling, O. August, S. Petzold, P. Veit, J. Christen, P. Moser, M. Wieneke, C. Berger, J. Blaesing, A. Dadgar, and A. Krost, “*Optical characterization of a InGaN/GaN microcavity with epitaxial AlInN/GaN bottom DBR*”, MRS Proceedings, 2012 1396 (2012)
- [5] C. Berger, A. Dadgar, J. Blaesing, **A. Franke**, T. Hempel, R. Goldhahn, J. Christen, and A. Krost, “*Growth of AlInN/AlGaIn distributed Bragg reflectors for high quality microcavities*”, Physica Status Solidi (c) 9, 5, 1253-1258 (2012)

## 2011

- [4] **A. Franke**, B. Bastek, J. Krimmling, J. Christen, P. Moser, A. Dadgar, A. Krost, “*Optical investigation of a hybrid GaN based microcavity with AlInN/GaN bottom and dielectric top distributed Bragg mirror*”, Superlattices and Microstructures 49, pages 187–192 (2011)

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- [2] Vivian K. X. Lin, S. Tripathy, S. L. Teo, S. B. Dolmanan, A. Dadgar, M. Noltemeyer, **A. Franke**, F. Bertram, J. Christen, and A. Krost, “*Luminescence Properties of Photonic Crystal InGaN/GaN Light Emitting Layers on Silicon-on-Insulator*”, Electrochemical and Solid-State Letters 13, H343 (2010)

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