# Curriculum Vitae

Dr.-Ing Mohsin Mumtaz Tarar

| | |
|---|---|
| Permanent address: | MCB 3/473, St. no 5, Moh. Shumali Behkri road Chakwal, Pakistan |
| Current address: | Krähbergweg 49, 89198 Westerstetten, Germany |
| Res. no: | +92 543 540340 |
| Mobile no: | +49 176 23401720 |
| E-mail: | mohsin.tarar@gmail.com<br>mohsin.tarar@uni-ulm .com |
| Date of birth: | 1st September 1985 |
| Place of birth: | Chakwal, Pakistan |


---

Professional Experience

06/2022 – Present Assistant Professor, University of Chakwal, Pakistan

06/2019 – 06/2022 Research scientist at University of Ulm, Germany

**Research Activities:**

- 200Gbuad TIA and Driver in IHP SiGe 130nm BiCMOS tech. (Industrial Project for Huawei Milan Research)
- Integrated electro-optical oscillator in IHP EPIC technology for D-band applications (DFG project)
- Supervision of doctoral students
- Writing research proposals

06/2018 – 06/2019 **Team lead** circuit design group at Innovations for High Performance Microelectronics (IHP) Frankfurt Oder, Germany

**Research Activities:**

- Four-channel coherent integrated optical transceiver on IHP EPIC platform (Industrial project for ADVA optical Berlin)
- Supervision of doctoral students

08/2012 – 04/2018 **Research Assistant**: PhD at Chair of High Frequency Electronics, RWTH Aachen University, Aachen, Germany.

**Research and Projects:**

- Efficient and broadband power amplifiers in CMOS for high data rate applications (PhD thesis in progress)

  **Achievements:**

  - Fully integrated, compact, and efficient wideband distributed power amplifier in 0.13 $\mu$m CMOS
  - 4–50 GHz fully integrated cascaded multistage distributed power amplifier in 65nm CMOS
  - A high output power wideband stacked distributed power amplifier in 0.13 $\mu$m CMOS
- Collaborative project: SHyWA - High bit rate Active Optical Cable with Wavelength Division Multiplexing in Silicon Hybrid Technology; Subproject "Design and Characterization of Optical Submodules for Transmitter and Receiver"

- **Achievements:**
  - High speed analysis, modelling, and characterisation of optical modulators based on ring-resonators (ShyWA project)

## Education

08/2008 – 03/2012 Masters in Electrical Engg. with specialization in communication and electronics (M. Sc.EE)
Linköping University, Linköping, Sweden

08/2010 – 04/2011 **Thesis**: Asymmetric Doherty Power Amplifier at 2.65 GHz for LTE applications at RWTH Aachen, Germany

**Achievement:**
- Design and Implementation of an Asymmetric Doherty Power Amplifier using GaN HEMT Cree model CGH40010 with 12 dB back-off for LTE applications with Peak to Average Power ratio (PAPR) of 9 dB in **ADS** design tool. It involves layout , EM simulation and verification through measurement.

07/2010 – 02/2012 Erasmus Exchange student, RWTH Aachen University, Aachen

06/2011 – 02/2012 Student researcher at RWTH Aachen University, Aachen
**Task**:
- Involved in stabilizing and linearizing Power amplifier. Tuning power amplifier to maximize their performance in terms of Power added efficiency (PAE) and output power.
- Design and layout 8-bit current steering DAC for Linear amplification using non-linear components (LINC) project

08/2003 – 07/2007 Bachelor of Electronics Engineering (B.S.EE)
International Islamic University Islamabad, Pakistan

## Publications

### Journals

**Mohsin M. Tarar** and Renato Negra, “Design and implementation of wideband stacked distributed power amplifier in 0.13 $\mu$m CMOS using uniform distributed topology” *IEEE Trans. Microw. Theory Tech.,* vol. no. 65, pp. 5212 – 5222, Nov. 2017.

**Mohsin M. Tarar**; Muh-dey Wei; Abdullah Khan; Renato Negra, “A compact broadband stacked medium power amplifier in standard 65 nm CMOS technology ” *Analog Integrated Circuits and Signal Processing*, Aug. 2016.

Abdullah Khan; Ahmed Aref Farouk; **Mohsin M. Tarar;** Renato Negra, “Analysis and design of class-O RF power amplifiers for wireless communication systems ” *Analog Integrated Circuits and Signal Processing*, Aug. 2016.

## Conferences

G. Dziallas; A.Fatemi, A. Peczek, **Mohsin M. Tarar,** L.Zimmermann, A. Malignaggi, D. Kissinger, G. Kahmen**;** A -115 dBc/Hz Integrated Optoelectronic Oscillator in a BiCMOS Silicon Photonic Technology, in *IEEE MTT-S Int. Microw. Symp.*I, USA, 2021.

**Mohsin M. Tarar;** Thomas Beucher; Saad Qayyum; Renato Negra, "Efficient 2–16 GHz flat-gain stacked distributed power amplifier in 0.13-µm CMOS using uniform distributed topology" , in *IEEE MTT-S Int. Microw. Symp. Dig*. Honolulu, HI, USA, Jun. 2017.

**Mohsin M. Tarar;** Muh-dey Wei; Renato Negra, "A compact 0.3–10 GHz broadband stacked amplifier in 65nm standard CMOS" , NORCHIP & International Symposium on System-on-Chip (SoC), Oct. 2015.

Heiko Füser; Anna Lena Giesecke; Andreas Prinzen; Stephan Suckow; Caroline Porschatis; Daniel Schall; Holger Lerch; **Mohsin M. Tarar**; Jens Bolten; Thorsten Wahlbrink; Heinrich Kurz, "56 Gb/s WDM transmitter module based on silicon microrings using comb lasers", *Conference on Lasers and Electro-Optics* (CLEO), 2015.

**Mohsin M. Tarar;** Muh-dey Wei; Renato Negra, "Enhanced gain bandwidth and loss compensated cascaded single-stage CMOS distributed amplifier", German Microwave Conference (GeMiC), 2015.

**Mohsin M. Tarar;** Muh-dey Wei; Renato Negra**,** "Stacked inverter-based amplifier with bandwidth enhancement by inductive peaking", Inter. Workshop on integrated Nonlinear Microwave and Milli-meter Wave Circuits (INMMiC), 2014.

**Mohsin M. Tarar;** Anna Lena Giesecke; Andreas Prinzen; Michael Waldow; Renato Negra, "Design and implementation of an electrical interface for ring modulators using CPWs", German Microwave Conference (GeMiC), 2014.

Ahmed F. Aref; AbdelRehman Askar; Ahmed A. Nafe; **Mohsin M. Tarar**; Renato Negra, "Efficient amplification of signals with high PAPR using a novel multilevel LINC transmitter architecture", 42nd European Microwave integrated Circuit Conference (EUMiC), 2012.

**Mohsin M. Tarar**; Danish Kalim; Renato Negra, "Asymmetric Doherty power amplifier at 2.2 GHz with 8.2 dB output power back-off", German Microwave Conference (GeMiC), 2012.

---

## Scholarship

07/2010 – 08/2011 Erasmus scholarship for exchange studies at RWTH Aachen University

---

## Skills/Interests

| | |
|---|---|
| Tools | Advance Design System (ADS), Sonnet, EM-simulations using momentum, Cadence, Matlab, MS Office tools, simulink, MS visio, Boardmaster 5.1.213, CircuitCam 6.1, Latex |
| Lab Skills | Experience with Vector Network Analyser (ZVA50, PNA-X), Spectrum Analyser, on-wafer measurements, Calibration techniques (SOLT, TRL), Noise and linearity Measurements |
| Interests | Broadband IC design, Broadband power amplifiers, integrated circuits for mm-Wave applications, |

---

## Languages

| | |
|---|---|
| English | Fluent (Spoken and Written) |
| Urdu | Mother tongue |
| Punjabi | Native |
| German | Basic |

---

## References

Can be provided upon request