

# Kristen N. Parrish

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## EDUCATION

The University of Texas at Austin  
(Austin, TX)

**PhD, Electrical Engineering, 8/2013**

Solid State Electronics focus

Dissertation: "Nanoscale Graphene for RF Circuits & Systems" & 4 first author publications

**MS, Electrical Engineering, 5/2010**

Electromagnetics & Acoustics focus

Publications on 60GHz antenna

Rose-Hulman Inst. of Tech.

(Terre Haute, IN)

**BS, Electrical Engineering, 5/2008**

## SKILLS & TOOLS

**Engineering:** LTSpice, Synopsys TCAD (SWB), MATLAB, Lorentz, Altium, Cadence Virtuoso, Keysight ADS, ANSYS suite (Maxwell, HFSS, Icepak, Q3D, Siwave, Spaceclaim)

**Data visualization:** Spotfire, PowerBI

**Languages:** English (native speaker), Japanese (beginner), Mandarin (beginner), Spanish (intermediate)

*Innovative:* Developed green-fields technology while working in both R&D and product lines, driving from patent to product; drove development of and implemented new best practices for technology development including guiding new projects through this system  
*Execution-driven:* delivered results impacting the near-term bottom line, with long term impact aligned to roadmaps and strategic goals  
*Effective:* with strong communication skills and diverse technical expertise, adept at communicating technical details across diverse sets of stakeholders (customers, business leadership, peers) to drive results

## Sabbatical (August 2022 – present):

- Columnist for IEEE Power Electronics Magazine, writing quarterly for Industry Pulse and as needed for Women in Engineering (WIE) and DEI (Diversity, Equity and Inclusion) columns; author profile here: <https://ieeexplore.ieee.org/author/37392081400>
- Advisory Board member – DEI Committee, PELS Magazine

## PROFESSIONAL EXPERIENCE

### Silicon Carbide Applications & Systems Engineer, Wolfspeed

Durham NC / Remotely from Beijing, CN: June 2019 – August 2022

- Supported JP/KR based customers with technical questions about devices in their applications, including three-way support of module manufacturer and automotive end customer (focus on simulation).
- Wrote internal and public documentation including application notes and internal FAE conference presentations on topics including parallel die oscillation, datasheet walkthrough, avalanche breakdown voltage, and die failure mechanisms.
- Served on JEDEC Power Electronics Datasheet committee; supported customer questions related to both JEDEC and AECQ101/AQG324 standards.
- Developed system level analyses for applications including traction inverters, to distil figures-of-merit and competitive analysis priorities and guide next-gen development.
- Led cross-functional business group alignment for the Power business (developed technology roadmaps), improving internal alignment as well as customer interactions.
- Led small working groups in company-wide unification efforts to develop New Technology Introduction process; launched and managed several new NTI projects.

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### LEADERSHIP & HONORS

2021: Co-speaker at IEEE PELS Students & Young Professionals symposium, talk entitled “**Building Momentum in Industry: Skills to Excel During Your First 5 Years**”.

2020: Elected IEEE Senior Member

2020-present: IEEE Eastern North Carolina Section volunteer; currently serving as Webmaster. Previously served as Vice Chair, Women in Engineering Chair, and created a mentoring program through IEEE Region 3 to facilitate remote mentorship opportunities during the Coronavirus pandemic

2018: Selected for 2019 Cohort of **Women for Technical Leadership** program at Texas Instruments

2015: Gave [future15 talk at SXSW](#) on self-driving cars / LIDAR

2013-2017: **High-Tech High Heels** board member, webmaster and volunteer coordinator (non-profit funding programs to encourage female STEM majors

**Module Packaging Technologist**, Power Business, Texas Instruments

Dallas TX: August 2016 - May 2019

- Co-inventor and project lead for a novel integrated magnetics packaging technology for power modules that would drastically reduce integration costs. Developed rigorous DOE plan, inductor designs, and correlated with measurement through initial prototyping (filed 3 patents and presented at internal conference). Recently launched in June 2024 as “MagPack” technology in [TPSM8266A](#) & [TPSM82816](#) products.
- Developed roadmap for discrete and integrated magnetics and worked with discrete vendors to develop technology meet TI’s electrical specifications and reliability needs, including factory visits and long-term strategy discussions.
- Developed workflow to correlate simulated results from ANSYS tools to measured electrical and thermal data to reduce package design cycle times by several months and improve package thermal performance.

**R&D Engineer**, Kilby Research Lab, Texas Instruments

Dallas TX: October 2013 - August 2016

- Developed co-design techniques for novel inductors in buck converter topologies and development of new magnetic technologies. Improved system level analysis and design including development of new inductor loss characterization techniques, and a novel integrated clip inductor (filed 1 patent).
- Photonics foundational technology champion responsible for the technology roadmap, identifying focus areas, aligning the project with business needs, defining resources, key skill sets, and university collaborations for silicon photonics.
- Designed photodetectors using Sentaurus TCAD and Cadence Virtuoso for integrated APD/front-end CMOS circuitry applications for LIDAR. Led tapeout and implemented wafer-level characterization for photocurrent measurement.
- Designed 140GHz Power Amplifier design in 65nm CMOS while developing high frequency models with tools such as Agilent ADS and Lorentz Pkview. High frequency (mmWave) characterization of waveguides and wafer level circuitry.