Shu (Ian) Wang

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EDUCATIONS

- Jan. 2015 - Present **Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM**

  Ph.D in Electrical Engineering
  - Current GPA: 4.11 Advisor: Assistant Prof. Zhen Peng
  - Research topic: Domain Decomposition Method in Computational Electromagnetic

- Sep. 2011 - Jun. 2014 **School of Opto-electronic Engineering, Beihang University(BUAA), Beijing, China**

  M.E. in Optical Engineering
  - Overall GPA:89.2/100.0 ,Ranking 2/51
  - Dissertation: Measurement of polarization cross-coupling in fiber coil based on OCDP

- Sep.2007 - Jul.2011 **College of Precision Instrument Engineering, Tianjin University, Tianjin, China**

  B.S. In Opto-electronics
  - Overall GPA:3.55/4.0
  - Dissertation: Absorptivity characteristice of Azo-material in Absorbance Modulation Micro-fabrication Technique

PROFICIENCIES & COURESES

Proficient in:
C/C++, Fortran, MPI/CUDA, Python, Perl, Matlab, Git, Linux

Highlight Courses:
Intro to Scientific Computing, Parallel Processing, Numerical PDE, Numerical Linear Algebra, Advance Finite Element Method, Engr Electromagnetics, Microwave Engr,Computational Electromagnetics,Antennas for Wireless Communication,Digital Image Processing, Semiconductor Physics,Modern Signal Processing

RESEARCH EXPERIENCE

- **Computational Science**
  - Dec 2016-Present **Space-Time Parallel solver for CEM problem**
    - Advisor: Prof. Zhen Peng, Electrical and Computer Engineering Department, UNM
    - Stability analysis of ParaReal Algorithm for 1st order hyperbolic PDE(Maxwell equations)
    - Implementation of waveform relaxation algorithm for space decomposition
  - Oct 2016-Dec 2016 **Least Square Finite Element Method for Convection-Diffusion Equation**
    - Advisor: Prof. Jehanzeb H. Chaudhry, Mathmatics Department, UNM
    - A-posterior error/Stability analysis of Least Square/discontinuous galerkin FEM for Convection-Diffusion Equation
  - Jan 2015-Dec 2016 **Domain Decomposition Method for CEM**
    - Advisor: Prof. Zhen Peng, Electrical and Computer Engineering Department, UNM
    - Optimal Schwarz preconditioned domain decomposition method of multi-physics solver for electromagnetics
    - Design of a novel optimal transmission condition without clement unknowns for parallel multi-solver
  - Jul 2013-Aug 2013 **Optical Simulations of Structured Materials and the Implementation of PML**
    - Advisor: Prof. Niels Gregersen, Lab of Nanophotonics Theory and Signal Processing, Denmark Technical University
    - Implementation of the eigenmode expansion/ finite element method to model the EM field in planar waveguide of various geometric structures
    - Modeling of a novel QW structure for the application of single-photon source and study the characterization of perfect matched layer in different mathematical forms
- **Optical Engineering**
  - Jul 2013-Aug 2013 **Directly Modulated VCSELs for optical Access and FTTH**
    - Advisor: Prof.Jesper B. Jensen, Lab of Metro Access & Short Range Communication, Denmark Technical University
    - Built up a 5km VCSEL based optical communication system with the lowest BER
    - Investigated the different optical communication scenarios using VPItransmissionMaker™ Optical Systems
  - Sep 2011-Dec 2013 **Characterization of White-Light Interferometer in Polarization Crosscoupling Test**
    - Adviser: Associate Prof. Jing Jin, Lab of Fiber Sensing and Gyroscope Technology, Beihang University
    - Investigation of the high-order birefringence dispersion in photonic crystal fiber
    - Design of a novel bi-directional measurement method to eliminate the influence of birefringence dispersion

PUBLICATIONS

- Z.Peng, **S.Wang**, etc, **High-fidelity, high-performance computational algorithms for intra-system electromagnetic interference analysis of IC and Electronics**: IEEE Transactions on Components, Packaging and Manufacturing Technology, Invited paper for IEEE T-CPMT Special Topics Section on "Address Signal and Power Integrity in Future Generation Systems (DOI:10.1109/TCPMP.2016.2636296, 201)
- Y.Shao, **S.Wang**, etc, **Hierarchical modeling and scalable algorithms for in-situ characterization of 3D IC packages:** IEEE/ACES and ICWITS 2016 (DOI.10.1109/ROPACES.2016.7465410)
- **S.Wang,** J.Jin, **Novel dispersion compensation method for cross-coupling measurement in PM-PCF based on OCDP**: Optical Fiber Technology, 19(2013)495-500
- **S.Wang,** J.Jin, etc, **Novel bidirectional path measurement of polarization cross-coupling distribution in PMF:** Proc. SPIE 8914, ISPDI 2013(DOI:10.1117/12.2034730)

- Z.M.Sun, **S.Wang,** etc, **Analysis of Shupe effect in polarization-maintaining photonic crystal fiber-optic gyroscope**: Optical Review (Vol.21,Issue 3,2014), pp 276-279

PRESENTATIONS/TALKS

- **S.Wang,** Z.Peng, **"A Space-Time Parallel Domain Decomposition Method for High Fidelity Electromagnetic Analysis",***IEEE* AP-S, San.Diego, US. Jul 2017
- **S.Wang,** Z.Peng, **"Scalable Full-Wave Algorithms for Signal Integrity Analysis of 3D ICs and Packages"**,*IEEE* AP-S, Puerto Rico, US. Jun 2016

HONORS & SCHOLARSHIPS

- **China National scholarship for Graduate Students** (2013 BUAA)
  - Award to top ten graduates in the department
- **Excellent Graduate Student Award** (2011-2012 BUAA)
  - Granted to only 2 graduates annually within the major class
- **Outstanding Student Cadres** (2012-2013 BUAA, 2010-2011 TJU)