



بسمه تعالی

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گروه الکترونیک، دانشکده مهندسی برق و کامپیوتر،

دانشگاه تربیت مدرس

صندوق پستی ۱۹۴-۱۴۱۱۵، تهران

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- دکتری الکترونیک، دانشگاه نیو ساوت ویلز (UNSW)، استرالیا، ۱۳۶۶
- کارشناسی ارشد الکترونیک، دانشگاه کالیفرنیا در سانتا باربارا (UCSB)، آمریکا، ۱۳۵۸
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عنوان مقام‌های علمی کسب شده

۱. استاد نمونه کشوری ۱۳۸۰-۱۳۸۱
۲. برنده جایزه بیست و دومین دوره کتاب سال جمهوری اسلامی، در قسمت علوم کاربردی- مهندسی برق ۱۳۸۳ (برای ترجمه کتاب الکترونیک لیزر)
- پیش‌کسوت پژوهشی در مهندسی برق، برگزیده انجمن IEEE شاخه ایران (اردیبهشت ۱۳۹۵)
- پیش‌کسوت انجمن اپتیک و فوتونیک ایران و دریافت لوح ابن هیثم (بهمن ۱۳۹۹).

فعالیت‌های شاخص فرهنگی، آموزشی، پژوهشی و فناوری و علمی - اجرایی:

- عضو وابسته فرهنگستان علوم جمهوری اسلامی ایران (گروه علوم مهندسی- شاخه برق و کامپیوتر (از اسفند ۱۴۰۱- ادامه دارد)
- عضو مدعو شاخه برق و کامپیوتر، گروه علوم مهندسی، فرهنگستان علوم جمهوری اسلامی ایران (مهر ۱۳۸۳- اسفند ۱۴۰۱)
- عضو اتاق فکر فناوری‌های کوانتومی از ابتدا (۱۴۰۱)
- مسئولیت هسته پژوهشی نانو-پلاسمو فوتونیک با عضویت پنج تن دیگر از اعضای هیات گروه های مخابرات میدان و نانو مواد با اعتبار پنجاه میلیارد ریال (طی قرار دادی پنج ساله با معاونت پژوهش و فناوری دانشگاه (از خرداد ۱۳۹۷)
- تدوین نسخه پیش نویس برنامه درسی گرایش افزاره های میکرو و نانو الکترونیک (با همیاری اساتید متخصص از دانشگاه های تربیت مدرس، تهران و صنعتی شریف) و ارائه به کمیته تخصصی شورای عالی برنامه ریزی.
- عضویت در دو زیر کمیته مخابرات و نانوفناوری جایزه مصطفی برای سه دوره متوالی از سال آغازین
- عضو هیات علمی وابسته گروه مهندسی برق دانشگاه گیلان (اردیبهشت ۱۳۹۹ - کماکان ادامه دارد)
- سردبیر مجله بین المللی اپتیک و فوتونیک ایران از تاریخ اخذ مجوز (۱۳۸۶/۰۱/۰۱) به مدت یکسال
- سردبیر فصل نامه صنایع الکترونیک از زمان اخذ مجوز (۱۳۸۸/۰۲/۱۴- کماکان ادامه دارد)
- دبیر علمی نهمین همایش فوتونیک ایران (انجمن فیزیک ایران) بهمن سال ۱۳۸۱
- دبیر علمی کنفرانس های اپتیک و فوتونیک ایران و مهندسی و فناوری فوتونیک ایران سالهای ۱۳۹۱ (دانشگاه زاهدان) و ۱۳۹۳ (دانشگاه شهید بهشتی).
- دبیر اولین همایش نانوفوتونیک ایران آبان ۱۳۹۸ (دانشگاه زاهدان)
- دبیر علمی سومین همایش بین المللی میکرو الکترونیک ایران (بهمن ۱۴۰۰ دانشگاه تربیت مدرس)
- عضو هیات تحریریه مجله بین المللی اپتیک و فوتونیک ایران (۱۳۸۶/۱/۱ - کماکان ادامه دارد)
- عضو کمیته علمی شاخه الکترونیک کنفرانس مهندسی برق ایران، سال های ۱۳۶۹-۱۴۰۱

- عضو کمیته علمی کنفرانس های اپتیک و فوتونیک ایران و مهندسی و فناوری فوتونیک ایران سالهای ۱۳۹۴ (دانشگاه یزد)، ۱۳۹۸ (دانشگاه خوارزمی)، و ۱۴۰۰ (دانشگاه شهید چمران)
- عضو هیات تحریریه مجله مهندسی برق و کامپیوتر (از زمان اخذ مجوز ۱۳۸۰/۰۱/۰۱ - کماکان ادامه دارد)
- عضو هیات تحریریه نشریه انجمن مهندسی برق و الکترونیک ایران (IAEEE) (از ۱۳۸۴ - کماکان ادامه دارد)
- عضو هیات تحریریه مجله بین المللی مهندسی برق امیر کبیر (AUTJEE) (از سال ۱۳۹۴ - کماکان ادامه دارد)
- دو دوره ۲ ساله عضو کمیسیون تخصصی دانشکده های مهندسی هیات ممیزه دانشگاه تربیت مدرس (منتهی به سال ۱۳۸۴)
- سه دوره ۲ ساله متوالی عضو حقیقی هیات ممیزه و رییس کمیسیون تخصصی دانشکده های مهندسی برق و کامپیوتر و صنایع دانشگاه تربیت مدرس (منتهی به شهریور ۱۴۰۱)
- دو دوره متوالی ۲ ساله نماینده وزارت متبوع در هیات ممیزه دانشگاه صنعتی امیر کبیر (مهر ۱۳۹۶ - شهریور ۱۴۰۰)
- دبیر اجرایی بیست و سومین کنفرانس اپتیک و فوتونیک ایران و نهمین کنفرانس مهندسی و فناوری فوتونیک ایران سال ۱۳۹۵ (دانشگاه تربیت مدرس)
- معاون آموزشی مرکز تحقیقات مخابرات ایران (آذر ۱۳۷۶ - بهمن ۱۳۸۲) از جمله فعالیتها در این دوره اخذ مجوز پژوهشکده ارتباطات و فناوری اطلاعات از وزارت عتف و تبدیل و وضعیت تعدادی از پژوهشگران مرکز به هیات علمی پژوهشی (با همکاری هیات ممیزه مرکزی وزارت عتف). همچنین راه اندازی و اقدام برای اخذ مجوز نشر مجله بین المللی ارتباطات و فناوری اطلاعات
- رییس بخش نوری پژوهشکده ارتباطات و فناوری اطلاعات (فروردین ۱۳۸۲ - مرداد ۱۳۸۳)
- معاون آموزشی دانشکده فنی و مهندسی دانشگاه تربیت مدرس (تیر ۷۵ - آبان ۷۶)
- رییس بخش مهندسی برق و کامپیوتر دانشگاه تربیت مدرس (مهر ۷۴ - تیر ۷۵)
- مدیر گروه الکترونیک سه دوره (آذر ۹۲ - اسفند ۹۵، شهریور ۸۳ - آبان ۸۶)
- راه اندازی دوره دکتری مهندسی برق تربیت مدرس باتشکیل هسته اولیه کمیته دکتری و دعوت از بزرگان رشته مهندسی برق در گرایش های مختلف از دانشگاه های برتر ایران، (سال ۱۳۶۹)
- مشارکت در جذب بودجه از خارج دانشگاه برای راه اندازی آزمایشگاه و اتاق تمیز نانو ایتوالکترونیک دانشگاه تربیت مدرس
- مسئول انتخاب پژوهشگر جوان برتر در شاخه مهندسی برق و کامپیوتر از سال آغازین (۹۳ تا کنون ادامه دارد)
- معاون پژوهشی وزارت فرهنگ و ارشاد اسلامی و دبیر شورای فرهنگ عمومی (۱۳۷۰ - ۱۳۷۱)
- رییس مرکز آمار و پژوهش های فرهنگی وزارت فرهنگ و ارشاد اسلامی (۱۳۶۹ - ۱۳۷۰)
- معاون پژوهشی دانشکده فنی و مهندسی دانشگاه تربیت مدرس ۱۳۶۷ - ۱۳۶۹

عضویت در مجامع علمی

- عضو وابسته فرهنگستان جمهوری اسلامی ایران
- عضو مادام العمر انجمن اپتیک و فوتونیک ایران
- عضو پیوسته انجمن فیزیک ایران،
- عضو ارشد انجمن مهندسی برق و الکترونیک آمریکا (IEEE, Senior Member).
- عضو ارشد انجمن اپتیک آمریکا (OSA, Senior Member).

موضوعات تحقیقاتی مورد علاقه:

- فزاره‌های فوتونی و پلاسمونی گرافنی
- افزاه‌های الکترونیک نوری
- انبرک نوری و پلاسمونی
- افزاره‌ها ی تراهرتز
- سنسورهای نوری و آکوستیکی
- کاربرد بلورهای‌های فوتونی در طراحی قطعات تمام نوری برای سامانه‌های مخابرات نوری

درس‌های تخصصی تدریس شده:

فیزیک الکترونیک؛ لیزر؛ افزاره‌های نیم‌رسانا (الکترونی و نوری)؛ الکترونیک کوانتومی (مکانیک کوانتومی کاربردی)؛ ترابرد حامل در نیم‌رسانا؛ ترابرد کوانتومی؛ فناوری ساخت افزاره‌های نیم‌رسانا

کتاب‌های ترجمه شده

- مبانی نیمه‌هادی، (R. F. Pierret)، انتشارات علمی دانشگاه صنعتی شریف، چاپ پنجم، ۱۳۸۶.
- دیود پیوند p-n، (G. W. Neudeck)، انتشارات علمی دانشگاه صنعتی شریف، چاپ پنجم، ۱۳۸۷.
- ترانزیستور دوقطبی پیوندی، (R. F. Pierret)، انتشارات علمی دانشگاه صنعتی شریف، چاپ چهارم، ۱۳۸۷.
- ادوات FET، (G. W. Neudeck)، انتشارات علمی دانشگاه صنعتی شریف، چاپ دوم، ۱۳۸۲.
- الکترونیک لیزر، (J. T. Verdeyen)، انتشارات علمی دانشگاه صنعتی شریف، چاپ دوم، ۱۳۸۸.

پست‌های اجرایی دانشگاهی

- مدیر گروه الکترونیک، ۱۳۷۳ تا ۱۳۷۴، ۱۳۸۲ تا ۱۳۸۶ و ۹۲ تا ۹۶
- معاون آموزشی، پژوهشگاه ارتباطات و فناوری اطلاعات، ۱۳۷۶ تا ۱۳۸۲
- معاون آموزشی، دانشکده فنی و مهندسی، دانشگاه تربیت مدرس، ۱۳۷۵ تا ۱۳۷۶
- رییس بخش مهندسی برق، دانشگاه تربیت مدرس، ۱۳۷۴ تا ۱۳۷۵
- معاون پژوهشی دانشکده فنی و مهندسی، دانشگاه تربیت مدرس، ۱۳۶۷ تا ۱۳۶۹

Publications in Peer Reviewed Journals2023

1. Effect of noise-induced quantum coherence in the intermediate band solar cells, M. Daryani, A. Rostami, G. Darvish, and **MK Moravvej-Farshi**, *Optics Continuum* **2** (9), 1950-1966, **2023**.
2. Numerical Study of a Vertical Tunneling Transistor Based on Gr/BC₂N/BC₆N and BC₂N'/hBN/BC₂N' Heterostructures, R Abbasi, R Faez, A Horri, **MK Moravvej-Farshi**, *ACS Appl. Electron. Mater.* **5** (7), 3612–3624, **2023**.
3. Bidirectional terahertz plasmonic switch based on periodically structured graphene, M. Dehghan, **MK Moravvej-Farshi**, M. Jabbari, G. Darvish, M. Ghaffari-Miab, *J. Opt. Soc. Am. B* **40** (7), 1773-1778, **2023**.
4. Graphene/MoS₂-Nanoribbons/Graphene Field-Effect Photodetectors: A Numerical Study, N. Fathollahbeigi, F. Ostovari, **MK Moravvej-Farshi**, *J. Electron. Mater.* **52**, 3046–3057, **2023**.
5. Tight-Binding Model of χ_3 and β_{12} Structures of Borophene, R Abbasi, R Faez, A Horri, **MK Moravvej-Farshi**, *J. Electron. Mater.* **52**, 2544–2552, **2023**.

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6. All-optical AZO-based modulator topped with Si metasurfaces, Sareh Vatani, Behdad Barahimi, **MK Moravvej-Farshi**, *Sci Rep* **12**, 21490, **2022**.
7. Binary THz modulator based on silicon Schottky-metasurface, S Ahadi, M Neshat, **MK Moravvej-Farshi**, *Sci Rep* **12**, 18871, **2022**.
8. Modeling of a vertical tunneling transistor based on Gr-hBN- χ_3 borophene heterostructure, R Abbasi, R Faez, A Horri, **MK Moravvej-Farshi**, *J App. Phys.* **132**, 3 034302, **2022**.
9. Plasmonic tweezers: Towards nanoscale manipulation, M Samadi, P Alibeigloo, A Aqhili, MA Khosravi, F Saeidi, Sh Vasini, Mo. Ghorbanzadeh, S Darbari, **MK Moravvej-Farshi**, *Optics and Lasers in Engineering* **151**, 107001, **2022**.
10. Semiempirical modeling of the effects of the intrinsic and extrinsic optical phonons on the performance of the graphene-based devices, S Jalalvandi, S Darbari, **MK Moravvej-Farshi**, *Sci Rep* **12**, 10417:1-9, **2022**.
11. Simulating a graphene-based acousto-plasmonic biosensor to eliminate the interference of surrounding medium, MM Mehrnegar, S Darbari, **MK Moravvej-Farshi**, *Optics Express* **30** (9), 15721-15734, **2022**.
12. Glucose sensing based on the interaction of gold nanoparticles@linoleic acid with the glucose, **M Nasehi**, **M Saeedi**, **J Ghanavi**, **MK Moravvej-Farshi**, *IEEE Sensors J*, **22** (7), 7169-7176, **2022**.
13. Fully integrated 3-bit all-optical analog to digital converter based on photonic crystal semiconductor optical amplifier, S Moshfe, K Abedi, **MK Moravvej-Farshi**, *Optics & Laser Technology* **148**, 107773, **2022**.
14. Dual-Purpose Optical Fiber Sensor: Relative Humidity and Ammonia Detection, M Ansari, **MK Moravvej-Farshi**, *Optics Continuum* **1** (2), 335-344
15. Oblique propagation of the squeezed states of s(p)-polarized light through non-Hermitian multilayered structures, , E Pilehvar, E Amooghorban, **MK Moravvej-Farshi**, *Optics Express* **30** (3), 3553-3565, **2022**.
16. Photoelectrical properties of integrated photodetectors based on bilayer graphene quantum dot with asymmetric metal contacts: a NEGF–DFT Study, M Ghandchi, G Darvish, M Moravvej-Farshi, *Physical Chemistry Chemical Physics* **24** (3), 1590-1597, **2022**.
17. Quantum optical analysis of squeezed state of light through dispersive non-Hermitian optical bilayers, E Pilevar, E Amooghorban, **MK Moravvej-Farshi**, *J Optics* **24** (2), 025201, **2022**.

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18. Bidirectional switchable beam splitter/filter based graphene loaded Si ring resonators, A Bagheri, F Nazari, **MK Moravvej-Farshi**, *Physica Scripta* **96** (12), 125536, **2021**.
19. Tunable optical isolator using Graphene-photonic crystal based hybrid system, M Zarei, F Nazari, **MK Moravvej-Farshi**, *Physica Scripta* **96** (9), 095502:1-8, , **2021**.
20. Thermophoresis suppression by graphene layer in tunable plasmonic tweezers based on hexagonal arrays of gold triangles: numerical study, M Samadi, S Darbari, **MK Moravvej-Farshi**, *Optics Express* **29** (18), 29056-29067, **2021**.
21. Exact dispersion relations for the hybrid plasmon-phonon modes in graphene on dielectric substrates with polar optical phonons, S Jalalvandi, S Darbari, **MK Moravvej-Farshi**, *Optics Express* **29** (17), 26925-26943, **2021**.

22. GNR/FET with Superlattice Source, Channel, and Drain: SLSCD-GNR/FET, B Behtoe, R Faez, A Shahhoseini, **MK Moravvej-Farshi**, *Physica E: Low-dimensional Systems and Nanostructures* **131**, 114728, **2021**.
23. An Integrated 2-bit all Optical Analog to Digital Converter based on Photonic Crystal Semiconductor Optical Amplifier, S Moshfe, **MK Moravvej-Farshi**, *Optical and Quantum Electronics* **53** (5), 212, **2021**.
24. Optical Modulation via Guided-Mode Resonance in an ITO-Loaded Distributed Bragg Reflector Topped with a Two-Dimensional Grating, S Vatani, H Taleb, **MK Moravvej-Farshi**, *IEEE J Selected Topics in Quantum Electronics* **27** (3), 3300307, **2021**.
25. Cation engineering for wide bandgap CH₃NH₃Pb(I 1-x Br x)₃ perovskite solar cells, A Fathzadeh, BA Nejang, **MK Moravvej-Farshi**, *OSA Continuum* **4** (1), 1-14, **2021**.
26. Studying the effect of exchange and correlation effects on high-order harmonics, M Monfared, E Irani, R Sadighi, **MK Moravvej-Farshi**, *J Nuclear Science and Technology* **94** (4), 1-10, **2021**.
27. Bistable Terahertz Switch designed by Integration of a Graphene Plasmonic Crystal into Fabry-Perot Resonator, M Dehghan, **MK Moravvej-Farshi**, M Jabbari, G Darvish, M Ghaffari-Miab, *IEEE J Selected Topics in Quantum Electronics* **27** (1), 4600606:1-6, **2021**.

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28. Electronic Properties of Various Graphene Quantum Dot Structures: an Ab Initio Study, M Ghandchi, G Darvish, **MK Moravvej-Farshi**, *Tabriz J Electrical Engineering* **51** (2), 213-220, **2020**.
29. Tunable Optical Demultiplexer for Dense Wavelength Division Multiplexing Systems Using Graphene-Silicon Microring Resonators, A Bagheri, F Nazari, **MK Moravvej-Farshi**, *J Electronic Materials* **49** (12), 7410-7419, **2020**.
30. Repositioning of plasmonic hotspots along the sidewalls of conical nanoholes: a numerical investigation, P Alibeigloo, M Ghorbanzadeh, **MK Moravvej-Farshi**, *OSA Continuum* **3** (10), 2817-2829, **2020**.
31. Properties of Bilayer Graphene Quantum Dots for Integrated Optics: An Ab Initio Study, M Ghandchi, G Darvish, **MK Moravvej-Farshi**, *Photonics* **7** (3), 78:1-16, **2020**.
32. Electronic transport properties of hydrogenated and fluorinated graphene: a computational study, MM Khatami, G Gaddemane, ML Van de Put, **MK Moravvej-Farshi**, *J Physics: Condensed Matter* **32** (49), 4600606:1-6, **2020**.
33. Next-generation on-chip plasmonic tweezer with a built-in light source, AA Khorami, **MK Moravvej-Farshi**, S Darbari, *OSA Continuum* **3** (8), 2044-2052, **2020**.
34. Integrated graphene/ferroelectric based plasmonic random access memory (P-RAM), M Ghezelsefloo, **MK Moravvej-Farshi**, S Darbari, *J Physics: Photonics* **2** (3), 035004:1-9, , **2020**.
35. Tuning the Optical Response of Cross-linked Fe@Au Nanoparticles, N Ahmadi, R Poursalehi, A Kirilyuk, **MK Moravvej-Farshi**, *Applied Surface Science* **514**, 165921:1-7, **2020**.
36. Using Superlattice Structure in the Source of GNR/FET to Improve Its Switching Performance, B Behtoe, R Faez, A Shahhoseini, **MK Moravvej-Farshi**, *IEEE Transactions on Electron Devices* **67** (3), 1334-1339, **2020**.
37. Ultralow-Power Electrically Activated Lab-on-a-Chip Plasmonic Tweezers, AA Khorami, **MK Moravvej-Farshi**, S Darbari, *Physical Review Applied* **13** (2), 024072:1-024072:10, **2020**.
38. Designing an integrated all-optical analog to digital converter, S Moshfe, **MK Moravvej-Farshi**, K Abedi, *International J Optics and Photonics* **14** (1), 3-14, **2020**.
39. Quantum Squeezed Light Propagation in an Optical Parity-Time (PT)-Symmetric Structure, E Pilehvar, E Amooghorban, **MK Moravvej-Farshi**, *International J Optics and Photonics (IJOP)* **13** (2), 181-188, **2019**.
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