

CURRICULUM VITAE

Shahid Chamran University of Ahvaz
Department of Physics
Ahvaz,
Iran

Email: yaserhajati@gmail.com
yaserhajati@scu.ac.ir
Mobile: [+989163432663]

Dr. Yaser Hajati

PhD in Condensed Matter Physics from Shahid Chamran University of Ahvaz

Personal data:

Place of birth: Ahvaz, Iran
Date of birth: ۰۸/۳۱/۱۹۸۱
Nationality: Iranian
Gender: Male
Marital status: Married

Education and Professional Career:

PhD: Condensed matter physics; Shahid Chamran University of Ahvaz, Iran

Thesis title: Quantum transport in graphene-based ferromagnetic/superconductor junction (۲۰۱۲)

MSc: Condensed matter physics; Shahid Chamran University of Ahvaz, Iran

Thesis title: Transport properties of high temperature superconductor (۲۰۰۸)

Visiting researcher at Uppsala University, Sweden ۲۰۱۱-۲۰۱۲, worked with Prof. Klaus Leifer and Prof. Olle Eriksson.

Visiting researcher at physics department, Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran ۲۰۱۴, worked with Prof. Malek Zareyan.

Visiting researcher at physics department, Braga University, Portugal, July ۲۰۱۷, worked with Professor Nuno Peres.

Research interest:

Mesoscopic physics
Superconductivity: Proximity and Josephson effects, ...
Spintronics and pseudospintronics
Quantum transport in two-dimensional materials: Graphene, Silicene, MoS₂, Topological insulator, Phosphorin (Black P)
Optical properties of graphene and other ۲D materials
Graphene plasmonics
Topological Insulators
Multi-Weyl semimetals

ISI Publications

- ١- Eduardo J. C. Dias, David Alcaraz Iranzo, P. A. D. Gonçalves, **Yaser Hajati**, Yuliy V. Bludov, Antti-Pekka Jauho, N. Asger Mortensen, Frank H. L. Koppens, N. M. R. Peres: *Probing Nonlocal Effects in Metals with Graphene Plasmons*. *Phys Rev B* ٩٧(٢٤), ١٠, ١١, ٣/PhysRevB.٩٧,٢٤٥٤٠٥
DOI: ١٠, ١١, ٣/PhysRevB.٩٧,٢٤٥٤٠٥
- ٢- S. Vosoughi-nia, G. Rashedi, **Y. hajati**: *Effect of d-wave pairing symmetry in transport properties of silicene-based superconductor junction*. DOI: ١٠, ١٠, ١٦/j.physc.٢٠١٨, ٠٢, ٠٤٠
- ٣- **Yaser Hajati**, Zeinab Zambouri, Mohammad Sabaeian: *Low-loss and high-performance mid-infrared plasmon-phonon in graphene-hexagonal boron nitride waveguide*. *Journal of the Optical Society of America B* ٠٢/٢٠١٨; ٣٥(٢):٤٤٦٠, DOI: ١٠, ١٣٦٤/JOSAB.٣٥, ٠٠, ٤٤٦
- ٤- Morteza Zargar Shoushtari, Masoomeh Akbari, **Yaser Hajati**: *Study of YBa₂Cu₃O_{7-δ} Superconductor/Graphene Oxide Composite*. *Journal of Superconductivity and Novel Magnetism* ٠١/٢٠١٨; DOI: ١٠, ١٠, ٠٧/s١٠٩٤٨-٠١٧-٤٥٤٩-٨
- ٥- Zohreh Vafapour, **Yaser Hajati**, Morteza Hajati, Hossain Ghahraloud: *Graphene-based mid-infrared biosensor*. *Journal of the Optical Society of America B* ١٢/٢٠١٧; ٣٤(١٢):٢٥٨٦٠, DOI: ١٠, ١٣٦٤/JOSAB.٣٤, ٠٠, ٢٥٨٦
- ٦- Sakineh Vosoughi-nia, **Yaser Hajati**, Gholamreza Rashedi: *Transport properties of silicene-based ferromagnetic-insulator-superconductor junction*. *Journal of Applied Physics* ٠٧/٢٠١٧; ١٢٢(٤):٠٤٣٩٠٦٠, DOI: ١٠, ١٠, ٦٣/١, ٤٩٩٦٣٤٧
- ٧- Z. Rashidian, Z. Lorestaniweiss, **Y. Hajati**, S. Rezaeipour, G. Rashedi: *Valley polarized current and Fan factor in a Ferromagnetic/normal/Ferromagnetic silicene superlattice junction*. *Journal of Magnetism and Magnetic Materials* ٠٦/٢٠١٧; ٤٤٢٠, DOI: ١٠, ١٠, ١٦/j.jmmm.٢٠١٧, ٠٦, ٠٢٣
- ٨- Morteza Hajati, **Yaser Hajati**: *Deep Subwavelength Confinement of Mid-infrared Plasmon Modes by Coupling Graphene-Coated Nanowire with a Dielectric Substrate*. *Plasmonics* ٠٢/٢٠١٧; ١٣(٢), DOI: ١٠, ١٠, ٠٧/s١١٤٦٨-٠١٧-٠٥٢٤-٢
- ٩- Morteza Hajati, **Yaser Hajati**: *Plasmonic characteristics of two vertically coupled graphene-coated nanowires integrated with substrate*. *Applied Optics* ٠٢/٢٠١٧; ٥٦(٤):٨٧٠٠, DOI: ١٠, ١٣٦٤/AO.٥٦, ٠٠, ٨٧٠
- ١٠- **Y. Hajati**, S. Vosoughi nia, G. Rashedi: *Tunneling transport in d-wave superconductor-silicene junction*. *Superlattices and Microstructures* ٠٢/٢٠١٧; ١٠٢:٢٠٢-٢١١٠, DOI: ١٠, ١٠, ١٦/j.spmi.٢٠١٦, ١١, ٠٦٧
- ١١- **Y Hajati**, S Vosoughi Nia, G Rashedi: *Tunneling transport in d-wave superconductor-silicene junction*.
- ١٢- Morteza Hajati, **Yaser Hajati**: *High-performance and low-loss plasmon waveguiding in graphene-coated nanowire with substrate*. *Journal of the Optical Society of America B* ١٢/٢٠١٦; ٣٣(٢):٢٥٦٠٠, DOI: ١٠, ١٣٦٤/JOSAB.٣٣, ٠٠, ٢٥٦٠
- ١٣- Zeinab Rashidian, Saeid Rezaeipour, **Yaser Hajati**, Zeinab Lorestaniweiss, Akiko Ueda: *Fully Valley/spin polarized current and Fano factor through the Graphene/ferromagnetic Silicene/Graphene junction*. *Journal of Magnetism and Magnetic Materials* ١٠/٢٠١٦; ٤٢٤٠, DOI: ١٠, ١٠, ١٦/j.jmmm.٢٠١٦, ١٠, ٠٥٢

- ۱۴- Z. Rashidian, **Y. Hajati**, S. Rezaeipour, S. Baher: *Controllable spin and valley polarized current through a superlattice of normal/ferromagnetic/normal silicene junction*. Physica E Low-dimensional Systems and Nanostructures ۱۰/۲۰۱۶; ۸۶., DOI:۱۰.۱۰۱۶/j.physe.۲۰۱۶.۱۰.۰۱۱
- ۱۵- Morteza Hajati, **Yaser Hajati**: *Dynamic tuning of mid-infrared plasmons in graphene–buffer–SiO₂–Si nanostructures*. Journal of the Optical Society of America B ۰۶/۲۰۱۶; ۳۳(۶):۱۳۰۳., DOI:۱۰.۱۳۶۴/JOSAB.۳۳.۰۰۱۳۰۳
- ۱۶- Babak Zare Rameshti, **Yaser Hajati**, Imam Makhfudz: *Majorana Zero Modes in Superconducting Proximity-coupled Magnetic Domain Wall*.
- ۱۷- Morteza Hajati, **Yaser Hajati**: *Investigation of plasmonic properties of graphene multilayer nano-ribbon waveguides*. Applied Optics ۰۳/۲۰۱۶; ۵۵(۸):۱۸۷۸., DOI:۱۰.۱۳۶۴/AO.۵۵.۰۰۱۸۷۸
- ۱۸- **Y. Hajati**, Z. Rashidian: *Gate-controlled spin and valley polarization transport in a ferromagnetic/nonmagnetic/ferromagnetic silicene junction*. Superlattices and Microstructures ۰۲/۲۰۱۶; ۹۲., DOI:۱۰.۱۰۱۶/j.spmi.۲۰۱۶.۰۲.۰۳۲
- ۱۹- **Yaser Hajati**, Zeinab Rashidian: *Valley and spin resonant tunneling current in ferromagnetic/nonmagnetic/ferromagnetic silicene junction*. AIP Advances ۰۲/۲۰۱۶; ۶(۲):۰۲۰۳۰۷., DOI:۱۰.۱۰۶۳/۱.۴۹۴۲.۴۳
- ۲۰- **Yaser Hajati**: *Charge transport of graphene ferromagnetic-insulator-superconductor junction with pairing state of broken time reversal symmetry*. AIP Advances ۰۴/۲۰۱۵; ۵(۴):۰۴۷۱۱۲., DOI:۱۰.۱۰۶۳/۱.۴۹۱۷۴۵۶
- ۲۱- M. Zargar Shoushtari, **Y. Hajati**, B. Jafari Zadeh: *Heat transport of graphene-based normal metal–ferromagnetic barrier-superconductor junctions*. Solid State Communications ۱۱/۲۰۱۴; ۲۰۰:۴۲–۴۷., DOI:۱۰.۱۰۱۶/j.ssc.۲۰۱۴.۰۹.۰۱۷
- ۲۲- **Y. Hajati**, A. Heidari, M.Z. Shoushtari, G. Rashedi: *Spin-dependent barrier effects on the transport properties of graphene-based normal metal/ferromagnetic barrier/d-wave superconductor junction*. Journal of Magnetism and Magnetic Materials ۰۸/۲۰۱۴; ۳۶۲:۳۶–۴۱., DOI:۱۰.۱۰۱۶/j.jmmm.۲۰۱۴.۰۳.۰۱۸
- ۲۳- **Y Hajati**, T Blom, S H M Jafri, S Haldar, S Bhandary, M Z Shoushtari, O Eriksson, B Sanyal, K Leifer: *Improved gas sensing activity in structurally defected bilayer graphene*. Nanotechnology ۱۱/۲۰۱۲; ۲۳(۵۰):۵۰۵۵۰۱., DOI:۱۰.۱۰۸۸/۰۹۵۷-۴۴۸۴/۲۳/۵۰/۵۰۵۵۰۱
- ۲۴- **Y. Hajati**, M. Zargar Shoushtari, G. Rashedi: *Spin-dependent transport properties through gapless graphene-based ferromagnet and gapped graphene-based superconductor junction*. Journal of Applied Physics ۰۷/۲۰۱۲; ۱۱۲(۱)., DOI:۱۰.۱۰۶۳/۱.۴۷۳۰۶۳۱
- ۲۵- **Y. Hajati**, M. Zargar Shoushtari, G. Rashedi: *Magnetoresistance in graphene-based ferromagnetic/ferromagnetic barrier/superconductor junction*. Journal of Applied Physics ۰۶/۲۰۱۲; ۱۱۱(۱۲)., DOI:۱۰.۱۰۶۳/۱.۴۷۲۹۳۰۲

Conference publications:

۱- **Yaser Hajati**, Bahar. Jafari zadeh, Morteza. Zargar Shoushtari " Ferromagnetic barrier effect on the heat transport of the graphene-based normal metal/ferromagnetic barrier/superconductor junction". In proceeding of ۴th conference in progress in superconductivity, Tehran, Iran (۲۰۱۴).

۲- **Yaser Hajati**, Spin dependent barrier effects on the transport properties of graphene-based normal metal/ferromagnetic barrier/d-wave superconductor junction. In proceeding of ۱۲th conference of

Condensed Matter of Physics, Esfahan, Iran (۲۰۱۴).

۳- **Y. Hajati**, M Z Shoushtari, O Eriksson, B Sanyal and K Leifer, Improved gas sensing activity in structurally defected graphene. In proceeding of the ۶th International Conference on Nanostructures (ICNS۶), Kish Island, Iran, March (۲۰۱۴).

۴- **Y. Hajati**, M. Zargar Shoushtari, G. Rashedi "Spin-dependent transport properties through gapless graphene-based ferromagnet and gapped graphene-based superconductor junction", In Proceeding of ۳th conference in progress in superconductivity, Kashan, Iran (۲۰۱۳).

۵- **Y. Hajati**, T.Blom, S.H.M.Jafri, M.Zargar Shoushtari, K.Leifer, Improved NO_x gas sensing properties of graphene after defect insertion by Gallium ion beam irradiation, Graduate workshop Materials for the ۲۱st Century, Uppsala, Sweden, February (۲۰۱۱)

۶- **Y. Hajati**, M. Zargar Shoushtari, G. Rashedi" magnetoresistance in ferromagnetic/ferromagnetic barrier/superconductor (FF_BS) graphene junction, In proceeding of ۱۰th conference of Condensed Matter of Physics, Shiraz, Iran (۲۰۱۰).

۷- **Y. Hajati**, M. Zargar Shoushtari,"The effect of Ag doping with low percentages on superconductors ErBa_{1-x}K_xCu₃O_{Y-δ} and ErBa_YCu₃O_{Y-δ} ", In proceeding of ۱۴th Conference in Crystallography, Birjand University, Birjand, Iran, February (۲۰۰۷).

۸- **Y. Hajati**, M. Zargar Shoushtari," The effect of Potassium doping on the structure of ErBa_YCu₃O_{Y-δ} superconductor ", In proceeding of ۱۲th Gava Zang Meeting on Condensed Matter of Physics, IASBS, Zanjan, Iran, May (۲۰۰۶).

۹- **Y. Hajati**, M. Zargar Shoushtari, M. Farbood,"Investigation of ErBa_a_{1-x}K_x₁Cu₃O_{Y-δ} superconductor" , In proceeding of Annual Iranian Physics Conference, Shahrood University, Shahrood, Iran, August (۲۰۰۶).

Computer and language skills:

Computer programming skill: Lumerical, CST,Comsol, Matlab, Fortran

Mathematical software: Mathematica, Maple

Graphical software: Photoshop, Origin

Experimental Experiences:

I am familiar with AFM, SEM, TEM, HRTEM, XRD, STM, FESEM, Electron Beam Lithography (EBL), Photo lithography, Raman Spectroscopy

Advances course passed:

Physics of Superconductivity

Physics of Superfluidity

Condensed Matter Physics I, II (Ashcroft, Taylor)

Many-Body Theory Applied to Solid-State Physics

Advanced Quantum Mechanics

Relativistic Quantum Mechanics

Statistical Mechanics I, II

Classical Electrodynamics

Classical Mechanics

Special Topics about Mesoscopic Physics, Spintronics and Graphene.

Special Topics in two-dimensional material

Email Address: yaserhajati@gmail.com yaser.hajati@scu.ac.ir