

# CURRICULUM VITAE

**Neda Sadooghi**  
Professor of Physics

Department of Physics  
Sharif University of Technology  
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## POSITION

### *Sharif University of Technology, Tehran, Iran*

11/2013 – Present Professor, Department of Physics  
11/2007 - 11/2013 Associate Professor, Department of Physics  
01/2006 - 11/2007 Assistant Professor, Permanent Position (tenured)  
09/2000 - 01/2006 Assistant Professor, Department of Physics  
09/1999 - 09/2000 Lecturer, Department of Physics

### *Institute for Theoretical Physics and Mathematics (IPM), Tehran, Iran*

01/2006 - 01/2007 Nonresident Research Fellow, School of Physics  
04/1999 - 12/2005 Resident Research Assistant, School of Physics

### *Université Louis Pasteur, Strasbourg, France*

02/1998 - 03/1999 Postgraduate Researcher, Laboratoire de Physique Théorique  
Advisor: Prof. Janos Polonyi

## EDUCATION

### *Ruprecht-Karls University, Heidelberg, Germany*

02/1998 PhD in Physics  
Supervisor: Prof. Heinz J. Rothe  
09/1993 MSc in Physics  
Supervisor: Prof. Heinz J. Rothe  
06/1987 German universities entrance qualification exam  
Final exam at "Studienkolleg"

### *High-School, Tehran, Iran*

06/1985 High School Diploma

## EXECUTIVE POSITIONS

### *Department of Physics, Sharif University of Technology, Tehran, Iran*

01/2022 – present Department Chair  
09/2017 – 09/2020 Vice-Chair in Graduate Studies' Affairs, Department of Physics  
07/2012 – 10/2014 Vice-Chair of Education, Department of Physics  
08/2009 – 08/2020 Member of Exceptional Talent Council  
09/2006 – 09/2008 Vice-Chair in Graduate Studies' Affairs, Department of Physics  
09/2005 – 09/2006 Vice-Chair of Education, Department of Physics

## TEACHING EXPERIENCE

### *Department of Physics, Sharif University of Technology, Tehran, Iran*

*P= PhD, M=MSc, U=Undergraduate, S=Spring Semester, FS=Fall Semester*

FS 2003, 2005, 2008, 2011, 2013; SS 2016, 2018, 2020, 2022	Quantum Field Theory I	[P]
SS 2004, 2006, 2009, 2012, 2014; FS 2016, 2018, 2020, 2022	Quantum Field Theory II	[P]
FS 2004, 2006, 2009, 2012, 2014; SS 2017, 2019, 2021	Quantum Field Theory III	[P]
SS 2007	Quantum Chromodynamics	[P]
SS 2000, 2001, 2005, 2008, 2009, 2023; FS 2003	Classical Mechanics	[M]
FS 1999, 2002 (with Prof. C. DeWitt-Morette)	Mathematical Physics	[M]

	SS 2010, 2013	Thermal Field Theory	[M]
	SS 2011, 2015, 2016, 2019	Elementary Particle Physics	[M+U]
	FS 2002, 2006	Analytical Mechanics I	[U]
	SS 2003, 2007	Analytical Mechanics II	[U]
	FS 2001, 2002; SS 2005, 2021	Quantum Mechanics I	[U]
	SS 2002, 2003; FS 2005, 2021	Quantum Mechanics II	[U]
	FS 2017, 2018, 2019, 2022	Quantum Mechanics III	[M]
	SS 2002	Mathematical Physics I	[U]
<b>SUMMER SCHOOL LECTURES</b>	Summer School on Phenomenology Aspects of Elementary Particle Physics, 09/2005 Tehran-Iran (2 lectures)		
<b>RESEARCH INTERESTS</b>	Thermal Field Theory, QCD under Extreme Conditions, Noncommutative Field Theory		
<b>VISITS</b>	07/2018 Dept. of Theoretical Physics, Munich University of Technology, Germany 08/2012 Dept. of Theoretical Physics, CERN, Geneva, Switzerland 06/2012 Dept. of Theoretical Physics, Goethe University, Frankfurt, Germany 07/2009 Dept. of Theoretical Physics, Munich University of Technology, Germany 07/2009 Dept. of Theoretical Physics, University of Heidelberg, Germany 02/2009 Dept. of Theoretical Physics, Munich University of Technology, Germany 07/2007 Dept. of Theoretical Physics, University of Heidelberg, Germany 07/2007 Dept. of Theoretical Physics, Humboldt University, Berlin, Germany 09/2003 Dept. of Theoretical Physics, University of Heidelberg, Germany 09/2003 Dept. of Theoretical Physics, Humboldt University, Berlin, Germany 04/2002 Dept. of Theoretical Physics, CERN, Geneva, Switzerland CERN= <i>The European Organization for Nuclear Research</i>		
<b>SABBATICAL LEAVE</b>	<b>Munich University of Technology (TUM), Munich, Germany</b> 09/2010 – 01/2011 Institute for Theoretical Physics (Chair: Prof. Nora Brambilla)		
<b>POST-DOCTORAL RESEARCH FELLOW</b>	<b>Dr. Sh. Fayazbakhsh</b>		09/2011 – 01/2015 School of particles and accelerators (IPM), Tehran, Iran
<b>PHD STUDENTS SUPERVISION</b>	<b>Department of Physics. Sharif University of Technology, Tehran, Iran</b>		
	[6] <b>Dr. S.M.A. Tabatabaee</b> , “ <i>The effect of magnetization on the evolution of the plasma of quarks and gluons</i> ”		2016 - 2020
	[5] <b>Dr. M. Shokri</b> on “ <i>Evolution of electromagnetic fields in a plasma of quarks and gluons</i> ”		2015 - 2019
	[4] <b>Dr. F. Taghinavaz</b> on “ <i>The effects of finite temperature and background magnetic fields on the observables of heavy ion collisions</i> ”		2012 - 2017
	[3] <b>Dr. Sh. Fayazbakhsh</b> on “ <i>Effect of external magnetic fields on 2SC color-superconductivity</i> ”		2007 - 2011
	[2] <b>Dr. A. A. Varshovi</b> on “ <i>Noncommutative anomaly</i> ” (Co-Advisor: F. Ardalan)		2008 - 2011
	[1] <b>Dr. M. Ghasemkhani</b> on “ <i>Noncommutative gauge theory in two dimensions</i> ” (Co-Advisor: F. Ardalan)		2006 - 2010

**CURRENT PhD STUDENTS** [01] E. Siri on QCD Phase diagram 2022 -

**MSc STUDENTS SUPERVISION** *Department of Physics, Sharif University of Technology, Tehran, Iran*

[01] M. Mohammadi Najafabadi 2002  
[02] M. Soroush 2002  
[03] M. Noorbala 2005  
[04] A. Jafari-Salim 2006  
[05] A. Sodeiri-Jalili 2006  
[06] D. Allahbakhshi 2007  
[07] K. Sohrabi-Anaraki 2009  
[08] Z. Davoodi 2009  
[09] S. Sadeghian 2011  
[10] F. Taghinavaz 2011  
[11] A. Barzegar 2012  
[12] O. Hajizadeh (Co-Advising with Sh. Rouhani) 2012  
[13] B. Salehi Kasmaei 2012  
[14] S.M.A. Tabatabaee 2013  
[15] A. Jalooli 2014  
[16] A. Jamshidi 2019  
[17] Y. Hosseini 2019  
[18] A. Hosseinzadeh 2019  
[19] M. H. Gholami 2020  
[20] M. Rahbardar Mojaver 2021  
[21] H. Mortazavi Ghalati 2022  
[22] M. Sedighi Jafari 2023

**CURRENT MSc STUDENTS** *Department of Physics, Sharif University of Technology, Tehran, Iran*

B. Karami (2022 – present)  
M. Sh. Sadeghi (2022 – present)

**THESES** *Ruprecht-Karls University, Heidelberg, Germany*

*One-loop perturbative study of the continuum behavior of fermionic formulations of lattice QED using the small- $a$  expansion* (PhD thesis, in German) 1994 - 1998  
*Staggered fermions in  $U(1)$  lattice gauge theory with finite chemical potential* (Master thesis, in German) 1992 - 1993

**PUBLICATIONS** ➤ *Papers in Refereed Journals*

[35] H. Mortazavi Ghalati and **Néda Sadooghi**, Magnetic dual chiral density wave in a rotating cold quark matter, Phys. Rev. D (2023) in press  
[34] **Néda Sadooghi**, S.M.A. Tabatabaee, and F. Taghinavaz, *Inverse magnetorotational catalysis and the phase diagram of a rotating hot and magnetized quark matter*, Phys. Rev. **D104** (2021) 116022  
[33] M. Kiamari, M. Rahbardar, M. Shokri, and **Néda Sadooghi**, *Anomalous Hall instability in the Chern-Simons magnetohydrodynamics*, Phys. Rev. **D104** (2021) 076023  
[32] S.M.A. Tabatabaee and **Néda Sadooghi**, *Wigner function formalism and the evolution of thermodynamic quantities in an expanding magnetized plasma*, Phys. Rev. **D101** (2020) 076022

- [31] **Néda Sadooghi** and S.M.A. Tabatabaee, *Paramagnetic squeezing of a uniformly expanding quark gluon plasma in and out of equilibrium*, Phys. Rev. **D99** (2019) 056021
- [30] M. Shokri and **Néda Sadooghi**, *Evolution of magnetic fields from the 3+1 dimensional self-similar and Gubser flows in ideal relativistic magneto-hydrodynamics*, JHEP **1811** (2018) 181
- [29] **Néda Sadooghi** and M. Shokri, *Rotating solutions of nonideal transverse Chern-Simons magnetohydrodynamics and the anomalous Hall current*, Phys. Rev. **D98** (2018) 076011
- [28] M. Shokri and **Néda Sadooghi**, *Novel self-similar rotating solutions of non-ideal transverse magnetohydrodynamics*, Phys. Rev. **D96** (2017) 116008
- [27] **Néda Sadooghi** and S.M.A. Tabatabaee, *The effect of magnetization and electric polarization on the anomalous transport coefficients of a chiral fluid*, New J. Phys. **19** (2017) 053014
- [26] **Néda Sadooghi** and F. Taghinavaz, *Dilepton production rates in a hot and magnetized quark-gluon plasma*, Annals of Physics **376** (2017) 218
- [25] **Néda Sadooghi** and F. Taghinavaz, *Magnetized plasminos in cold and hot QED plasmas*, Phys. Rev. **D92** (2015) 025006
- [24] Sh. Fayazbakhsh and **Néda Sadooghi**, *Anomalous magnetic moment of hot quarks, inverse magnetic catalysis and reentrance of the chiral symmetry broken phase*, Phys. Rev. **D90** (2014) 105030
- [23] **Néda Sadooghi** and F. Taghinavaz, *Contribution of plasminos to the shear viscosity of a hot and dense Yukawa-Fermi gas*, Phys. Rev. **D89** (2014) 125005
- [22] Sh. Fayazbakhsh and **Néda Sadooghi**, *Weak decay constant of neutral pions in a hot and magnetized quark matter*, Phys. Rev. **D88** (2013) 065030
- [21] F. Ardalan, H. Arfaei, M. Ghasemkhani and **Néda Sadooghi**, *Gauge invariant cutoff QED*, Phys. Scripta (2013) 035101
- [20] Sh. Fayazbakhsh, S. Sadeghian and **Néda Sadooghi**, *Properties of neutral mesons in a hot and magnetized quark matter*, Phys. Rev. **D86** (2012) 085042
- [19] **Néda Sadooghi** and F. Taghinavaz, *Local electric current correlation function in exponentially decaying magnetic fields*, Phys. Rev. **D85** (2012) 125035
- [18] F. Ardalan, M. Ghasemkhani and **Néda Sadooghi**, *On the mass spectrum of noncommutative Schwinger model in Euclidean  $R^2$  space*, Eur. Phys. J. **C71** (2011) 1606
- [17] Sh. Fayazbakhsh and **Néda Sadooghi**, *Phase diagram of hot magnetized two-flavor superconducting quark matter*, Phys. Rev. **D83** (2011) 025026
- [16] F. Ardalan and **Néda Sadooghi**, *Translational-invariant noncommutative gauge theory*, Phys. Rev. **D83**, (2011) 025014
- [15] Sh. Fayazbakhsh and **Néda Sadooghi**, *Color neutral 2SC phase of cold and dense quark matter in the presence of constant magnetic fields*, Phys. Rev. **D82** (2010) 045010
- [14] M. Ghasemkhani and **Néda Sadooghi**, *Perturbative quantization of two-dimensional space-time noncommutative QED*, Phys. Rev. **D81** (2010) 045014
- [13] **Néda Sadooghi** and K. Sohrabi Anaraki, *Improved ring potential of QED at finite temperature and in the presence of weak and strong magnetic fields*, Phys. Rev. **D78** (2008) 125019
- [12] **Néda Sadooghi** and A. Sodeiri Jalili, *New look at the modified Coulomb potential in a strong magnetic field*, Phys. Rev. **D76** (2007) 065013
- [11] **Néda Sadooghi** and A. Jafari Salim, *Axial anomaly of QED in a strong magnetic field and noncommutative anomaly*, Phys.Rev. **D74** (2006) 085032
- [10] A. Jafari Salim and **Néda Sadooghi**, *Dynamics of  $O(N)$  model in a strong magnetic background field as a modified noncommutative Field Theory*, Phys. Rev. **D73** (2006) 065023

- [09] F. Ardalan, H. Arfaei and **Néda Sadooghi**, *On the anomalies and Schwinger terms in noncommutative gauge theories*, Int. J. Mod. Phys. **A21** (2006) 4161
- [08] F. Ardalan and **Néda Sadooghi**, *Planar and nonplanar Konishi anomalies and exact Wilsonian effective superpotential for noncommutative  $N=1$  super-symmetric  $U(1)$* , Int. J. Mod. Phys. **A20** (2005) 2859
- [07] M. Alishahiha, A. Ghodsi and **Néda Sadooghi**, *One-loop perturbative corrections to non-anti-commutativity parameter of  $N=1/2$  supersymmetric  $U(N)$  gauge theory*, Nucl. Phys. **B691** (2004) 111
- [06] **Néda Sadooghi** and M. Mohammadi, *On the  $\beta$ -function and conformal anomaly of noncommutative QED with adjoint matter fields*, Int. J. Mod. Phys. **A18** (2003) 2591
- [05] **Néda Sadooghi** and M. Soroush, *Noncommutative dipole QED*, Int. J. Mod. Phys. **A18** (2003) 97
- [04] F. Ardalan and **Néda Sadooghi**, *Anomaly and nonplanar diagrams in noncommutative gauge theories*, Int. J. Mod. Phys. **A17** (2002) 123
- [03] F. Ardalan and **Néda Sadooghi**, *Axial anomaly in noncommutative QED on  $R^4$* , Int. J. Mod. Phys. **A16** (2001) 3151
- [02] H. J. Rothe and **Néda Sadooghi**, *A new look at the axial anomaly in lattice QED with Wilson fermions*, Phys. Rev. **D58** (1998) 074502
- [01] **Néda Sadooghi** and H. J. Rothe, *Continuum behavior of lattice QED, discretized with one-sided lattice differences, in one-loop order*, Phys. Rev. **D55** (1997) 6749

➤ **Preprint**

- [1] **Néda Sadooghi**, *Chiral MHD description of a non-dissipative magnetized QGP fluid using the effective NJL model in a strong magnetic field*, arXiv: 0905.2097

➤ **Works in Progress**

- [1] Relativistic magnetohydrodynamics of a spinful and vertical fluid , with M. Kiamari and M. Sedighi Jafari

➤ **Papers in Conference Proceedings**

- [1] Sh. Fayazbakhsh and **Néda Sadooghi**, *Two-flavor color superconductivity at finite temperature, chemical potential and in the presence of strong magnetic field*, arXiv: 1302.0622, Quark Confinement and the Hadron Spectrum X, October 8-12, Munich, Germany
- [2] **Néda Sadooghi**, *Modified Coulomb potential of QED in a strong magnetic field*, PoS (LATTICE 2007) 082, Talk presented in XXV International Symposium on Lattice Field Theory, July 30-August 4, 2007, Regensburg, Germany
- [3] F. Ardalan and **Néda Sadooghi**, *Exact Wilsonian superpotential for noncommutative  $N=1$  supersymmetric  $U(1)$* : Talk presented by N. Sadooghi in \*Teheran 2004, Mathematical Physics\*, 162-165
- [4] **Néda Sadooghi** and F. Taghinavaz, *Contribution of plasminos to the shear viscosity of a hot and dense Yukawa-Fermi gas*, Poster presented by F. Taghinavaz in XIth Quark Confinement and the Hadron Spectrum", Saint-Petersburg, Russia, 8-12 September 2014
- [5] M. Shokri and **Néda Sadooghi**, Talk presented by M. Shokri in XIIth Quark Confinement and the Hadron Spectrum", Maynooth, Ireland, 31 July - 6 August 2018, to be published in PoS (2019)
- [6] S.M.A. Tabatabaee and **Néda Sadooghi**, Poster presented by S.M.A. Tabatabaee in XIIth Quark Confinement and the Hadron Spectrum", Maynooth, Ireland, 31 July - 6 August 2018, to be published in PoS (2019)

➤ **Edited Books**

Mathematical Physics: Proceedings of XI Regional Conference  
Tehran-Iran, May 3-6, 2004

Editors: S. Rahvar, F. Shojaei and **Néda Sadooghi**, World Scientific Publishing Co. 2005

**CONFERENCES,  
WORKSHOPS  
AND WEEKLY  
SEMINARS**

➤ **Presentation in International, Regional and National Conferences**

- 01/2018 IPM Workshop on collective phenomena and heavy ion physics, IPM, Iran
- 09/2015 Annual conference, Physical Society of Iran, Mashhad, Iran
- 10/2014 Workshop on QCD and QED, IPM, Tehran, Iran
- 05/2014 Quark Matter 2014, Darmstadt, Germany (Poster)
- 04/2014 Third School and Workshop on AdS/CFT and its Applications, Tehran, Iran
- 05/2013 Second School and Workshop on AdS/CFT and its Applications, Tehran, Iran
- 07/2009 Mideast 2009, Fifth Regional Meeting on String Theory, Crete, Greece
- 02/2009 47<sup>th</sup> Winter School on Theoretical Physics, Schladming, Austria (Poster)
- 06/2008 PASCOS 2008, Waterloo, Canada
- 08/2007 LATTICE 2007 Regensburg, Germany
- 07/2007 Mideast 2007, Fourth Regional Meeting on String Theory, Patras, Greece
- 05/2006 IPM School and Conference on Lepton and Hadron Physics, Tehran, Iran
- 04/2006 ISS 2006, Intl. School and Workshop on String Theory, Tehran, Iran
- 09/2005 NCG 2005, Intl. Workshop on Noncommutative Geometry, Tehran, Iran
- 07/2005 Mideast 2005, Third Regional Meeting on String Theory, Crete, Greece
- 06/2005 Spring Conference on Theoretical Physics, IPM, Tehran, Iran
- 01/2005 ISS 2005, Intl. School and Workshop on String Theory, Qeshm, Iran
- 06/2004 Spring Conference on Theoretical Physics, IPM, Tehran, Iran
- 05/2004 11<sup>th</sup> Regional Meeting on Mathematical Physics, Tehran, Iran
- 10/2003 ISS 2003, Intl. School and Workshop on String Theory, Anzali, Iran
- 06/2003 Spring Conference on Theoretical Physics, IPM, Tehran, Iran
- 06/2002 Spring Conference on Theoretical Physics, IPM, Tehran, Iran
- 05/2002 ISS 2002, Intl. School and Workshop on String Theory, Shiraz, Iran
- 09/2001 School and Workshop on Logarithmic Conformal Field Theory, Tehran, Iran
- 06/2001 Spring Conference on Theoretical Physics, IPM, Tehran, Iran
- 06/2001 Mideast 2001, First Regional Meeting on String Theory, Crete, Greece
- 06/2000 Spring Conference on Theoretical Physics, IPM, Tehran, Iran
- 05/2000 ISS 2000, Intl. School and Workshop on String Theory, Isfahan, Iran
- 06/1999 Spring Conference on Theoretical Physics, IPM, Tehran, Iran

➤ **Speaker at Weekly Seminars**

- 07/2018 Dept. of Theoretical Physics, Munich University of Technology, Germany
- 07/2012 Dept. of Theoretical Physics, University of Heidelberg, Germany
- 07/2012 Dept. of Theoretical Physics, Goethe University, Frankfurt, Germany
- 11/2010 Dept. of Theoretical Physics, Munich University of Technology, Germany
- 07/2009 Dept. of Theoretical Physics, Munich University of Technology, Germany
- 07/2009 Dept. of Theoretical Physics, University of Heidelberg, Germany
- 02/2009 Dept. of Theoretical Physics, Munich University of Technology, Germany
- 07/2007 Dept. of Theoretical Physics, University of Heidelberg, Germany
- 07/2007 Dept. of Theoretical Physics, Humboldt University, Berlin, Germany
- 09/2003 Dept. of Theoretical Physics, University of Heidelberg, Germany
- 09/2003 Dept. of Theoretical Physics, Humboldt University, Berlin, Germany
- 04/2002 Dept. of Theoretical Physics, CERN, Geneva, Switzerland

➤ **Conference and Workshop Participations**

- 07/2005 Post-Conference, Strings at CERN, Geneva, Switzerland  
06/2004 Strings 2004, Paris, France  
01/2001 Strings 2001, Mumbai, India  
04/2002 Spring School on Superstring and Related Matter, Trieste, Italy  
04/2001 Spring School on Superstring and Related Matter, Trieste, Italy  
04/2000 Spring School on Superstring and Related Matter, Trieste, Italy  
07/1998 International Conference; QCD at finite baryon density, Bielefeld, Germany

**FELLOWSHIPS**

➤ **Ruprecht-Karls University, Heidelberg, Germany**

PhD Fellowship, German Research Council (DFG) 1994-1998

**HONORS**

➤ **Sharif University of Technology, Tehran, Iran**

Distinguished lecturer, Department of Physics 2013

**MEMBER IN  
ORGANIZATION  
COMMITTEES**

➤ **Conferences and Workshops**

Mini-Workshop on Particle Physics, Higgs Day, October 7, 2012, 10/2012

Department of Physics, Sharif University of Technology, Tehran, Iran

XI Regional Conference in Mathematical Physics, May 3-6, 2004, Tehran, 05/2004  
Iran

➤ **Colloquia**

Physics Department Colloquia, Department of Physics 2007- 2020  
Sharif University of Technology, Tehran, Iran

**REFEREE  
SERVICES**

Physical Review D, American Physical Society (APS)

Physical Society of Iran (PSI)

**LANGUAGES**

English, German, French, and Persian (native)

**September 2023  
Tehran, Iran**