

Talaat Abdelhamid, Ph. D.

PERSONAL DATA

Full Name: Talaat Abdelhamid Talaat Abdelhamid

Nationality: Egyptian

Sex: Male

Marital status: Married with two sons and one girl (*Moaz, Yaseen, Khadija*)

Date of birth: March 5th, 1988

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EDUCATION

- Aug. 2014 - Dec. 2017:

Ph.D in Computational and Applied Mathematics, Central China Normal University, Wuhan 430079, Hubei, China.

- Aug. 2016 – Aug. 2017:

Visiting PhD student, Shenzhen Institutes of Advanced Technology, Chinese Academy of Science, Shenzhen 518055, China.

- Sep. 2011 – June 2013:

M.Sc in Applied Mathematics, Faculty of Science, Minia University, Al- Minia, Egypt.

- 2006 – 2009:

BSc, Minia University, Minya, Egypt. (Grade: *Very Good with Honor*).

PROFESSIONAL EXPERIENCE

- **Feb. 2023 – To date:** Associate professor at **Department of Physics and Mathematical Engineering**, Faculty of Electronic Engineering, Menoufia University, Egypt,

<https://www.menofia.edu.eg/Home/en>

- **Jan. 2020 – Dec. 2022:** CAS President's International Fellowship Initiative Postdoctoral fellow at Shenzhen Institutes of Advanced Technology, Shenzhen, China,

<https://www.siat.ac.cn/>

- **2018 – 2021:** Postdoctoral fellow at Harbin institute of Technology, School of Mechanical Engineering, Shenzhen, China,

<http://en.hitsz.edu.cn/>

- **Feb. 2018 – Feb. 2023: Assistant Professor**, Physics and Mathematical Engineering Department, Faculty of Electronic Engineering, Menoufia University, Egypt,
<https://www.menofia.edu.eg/Home/en>
- **2014 – 2017: Assistant Lecturer, Physics and Mathematical Engineering Department**, Faculty of Electronic Engineering, Menoufia University, Egypt
http://mu.menofia.edu.eg/Talat_Talat/StaffDetails/1/en
- **2013 – 2014: Assistant lecturer at Department of Mathematics**, Faculty of Science, Minia University, Al-Minia, Egypt <https://www.minia.edu.eg/Minia/>
- **2010 – 2013: Demonstrator at Department of Mathematics**, Faculty of Science, Minia University, Al-Minia, Egypt, <https://www.minia.edu.eg/Minia/>

Teaching experience

I possess extensive teaching experience at both the undergraduate and graduate levels, and have taught a variety of courses, including but not limited to:

- 1- Calculus of differentiation.
- 2- Linear/Nonlinear Algebra - Theory of equations.
- 3- Ordinary/Partial differentiation equations.
- 4- Calculus of integration.
- 5- Linear programming and Optimization.
- 6- Mechanics Statics and Dynamics.
- 7- Differential equations.
- 8- Laplace Transforms.
- 9- Multiple integrals.
- 10- Special functions.
- 11- Fourier series and Fourier transforms.
- 12- Numerical analysis.
- 13- Functional Analysis
- 14- Functions of complex variables.
- 15- Z-Transform.
- 16- Applied statistics and probability.
- 17- Essential Information Technology.
- 18- Introduction to Python
- 19- Finite element methods using MATLAB.
- 20- Fluid dynamics.
- 21- Difference equations.
- 22- Finite difference methods.
- 23- Advanced Mathematical engineering.

Other advanced courses in pure and applied mathematics for the undergraduate and postgraduate levels.

Conferences & Workshops

- International Conference on Numerical Partial Differential Equations and Their Applications, **May 25th -29th 2015**, Wuhan University, Wuhan, China.
- International Exchange and Innovation Conference on Engineering & Science (IEICES), **2021-10-21 to 2021-10-22**, Kyushu University, Japan.
- The 4th CAM-ICCM Workshop: Multiscale and Large-scale Scientific Computing, **June 18th -20th, 2016**, Hong Kong.
- Workshop on Optimization in Scientific Computing, CUHK, **June 21st -23rd, 2017**, Hong Kong.
- The 3rd International Conference for Mathematics and Its Applications (ICMA20) Cairo, Egypt : **26-27 Nov. 2020**.
- The 2nd IEEE International Conference on Electronic Engineering, Menoufia University, Egypt. Faculty of Electronic Engineering, Menouf **3-4 July 2021**.

Awards and Projects

- **Nov. 2021 – Nov. 2023:**
Principal Investigator of a collaboration International project Funded by 1.2 million E.L. from the Science & Technology Development Fund and the Ministry of Science and Technology of the People Republic of China (**STDF Egypt- China**) **Call 2**, under the title
“ High Performance Computing Algorithms and Software Development for Hemodynamics Analysis of Human Blood Flow”
<https://stdf.eg/>
- Receiving the Menoufia University Certificate of Scientific Excellence for the year 2022.
- **Oct. 2021:** Completion fellowship certificate of postdoctoral at Harbin Institute of Technology (HIT) Shenzhen.
http://www.chinapostdoctor.org.cn/website/cxzx_zhengshuchayan.html?UserID=5da9cca2-86a6-48a8-a6f7-615e276a7fb3&DoctorNumber=217610
- **Dec. 2018:** Outstanding Academic Achievement Award Menoufya University, Egypt.
- **Dec. 2017:** Winner of **ZHOU HONGYU** Scholarship award 2017, CCNU, Wuhan, China.

- **Jun. 2016:** Outstanding Academic Achievement Award 2016, CCNU, China.
- **Jun. 2015:** Outstanding Academic Achievement Award 2015, CCNU, China.
- **Aug. 2014 – Aug. 2017:** PhD scholarship (full time) from Chinese Scholarship.
- **Jun. 2009:** Outstanding Academic Achievement Award Minia University, Egypt.

PUBLICATIONS

1. Wafa F Alfwzan, Zakir Hussain, Kamel Al-Khaled, Arshad Riaz, **Talaat Abdelhamid**, Sami Ullah Khan, Khurram Javid, M El Sayed, Wathek Chammam, An optimized stability framework for three-dimensional Hartman flow via Chebyshev collocation simulations, Results in Physics, 106497, 2023.
<https://doi.org/10.1016/j.rinp.2023.106497>
2. **Talaat Abdelhamid**, Ahmed G. Rahma, Md. Mahbub Alam, Md. Islam, Rongliang Chen, Qiang Zhou, Hongjun Zhu, Heat transfer and flow around curved corner cylinder: Effect of attack angle. SN Appl. Sci. 5, 163 (2023).
<https://doi.org/10.1007/s42452-023-05377-w>
3. Ahmed G. Rahma, Khaled Yousef, **Talaat Abdelhamid**, Blood flow CFD simulation on a cerebral artery of a stroke patient. SN Appl. Sci. 4, 261 (2022). <https://doi.org/10.1007/s42452-022-05149-y>
4. Rahma, A.G., **Talaat Abdelhamid**. Hemodynamic and fluid flow analysis of a cerebral aneurysm: a CFD simulation. SN Appl. Sci. 5, 62 (2023).
<https://doi.org/10.1007/s42452-023-05276-0>
5. **Talaat Abdelhamid**, Ammar H. Elsheikh, Olatunji Mumini Omisore, N. A. Saeed, T. Muthuramalingam, Ronglinag Chen, Md. Mahbub Alam, Reconstruction of the heat transfer coefficients and heat fluxes in heat conduction problems, Mathematics and Computers in Simulation, Vol. 187, 2021, P 134-154.
<https://doi.org/10.1016/j.matcom.2021.02.011>
6. Ehsanul Azim, Md. Jahid Hasan Sagor, Shadman Sakief Hridoy, A.B.M. Rafiqul Hasan, S.M. Ashrafur Rahman, Abdul Alim, **Talaat Abdelhamid**, Effect of speed ratio and location of rotating cylinders on the heat transfer advancement, J. Heat Transfer. Feb 2022, 144(2), 022601. <https://doi.org/10.1115/1.4053214>
7. S Hridoy, E Azim, MJH Sagor, **Talaat Abdelhamid**, Investigating variation of dynamic frictional Effect of different textile fabrics against dry and wet human skin

condition at a fixed load, International Exchange and Innovation Conference on Engineering & Science (IEICES), 2021-10-21 to 2021-10-22, Kyushu University, Japan.

8. **Talaat Abdelhamid**, F. Khayat, H. Zayeni, and Rongliang Chen, Levenberg-Marquardt Method for identifying Young's modulus of the elasticity imaging inverse problem, Electronic Research Archive (ERA), 30, 4: 1532-1557, 2022.
<https://doi.org/10.3934/era.2022079>
9. Zineb Laouar, Nouria Arar, and **Abdelhamid Talaat**, Efficient spectral Legendre Galerkin approach for the advection diffusion equation with constant and variable coefficients under mixed Robin boundary conditions, 2023, 7(1), 133 – 147.
<https://doi.org/10.31197/atnaa.1139533>
10. **Talaat Abdelhamid**, Md. Mahbub Alam, and Md. Islam, Heat transfer and flow around cylinder: effect of corner radius and Reynolds number, International Journal of Heat and Mass Transfer, 171, 121105, 2021.
<https://doi.org/10.1016/j.ijheatmasstransfer.2021.121105>
11. **Talaat Abdelhamid**, Rongliang Chen and Mahbub Alam Md., Prediction of multi-parameters in the inverse heat conduction problems, IOP Publishing Ltd, Journal of Physics: Conference Series, Vol. 1707, 2020, International Conference on Physics, Mechanics and Mathematical Science 18-19 Oct. 2020, Xi'an, China.
<http://dx.doi.org/10.1088/1742-6596/1707/1/012003>
12. **Talaat Abdelhamid**, Ahmed G. Rahma, R Chen, Flow structure around a curved corner cylinder with varied attack angles, 2nd IEEE, ICEEM Conference, 2021.
<https://doi.org/10.1109/ICEEM52022.2021.9480633>
13. Iman Mohamad Sharaf and **Talaat Abdelhamid**, A similarity measure for interval type-2 fuzzy sets applied to fuzzy risk analysis, 2nd IEEE, ICEEM Conference, 2021. <https://doi.org/10.1109/ICEEM52022.2021.9480660>
14. **Talaat Abdelhamid**, R Chen, M Alam, A Numerical solution of the linear elasticity problem using the FEM, 2nd IEEE, ICEEM Conference, 2021.
<http://dx.doi.org/10.1109/ICEEM52022.2021.9480613>
15. **Talaat Abdelhamid**, Rongliang Chen, Md. Mahbub Alam, Nonlinear conjugate gradient method for identifying Young's modulus of the elasticity imaging inverse

- problem, *Inverse Problems in Science & Engineering*, 1-21, 2021.
<https://doi.org/10.1080/17415977.2021.1905638>
16. N. A. Saeed, Emad Mahrous Awwad, **Talaat Abdelhamid**, Mohammed A. El-Meligy and Mohamed Sharaf, Adaptive versus Conventional Positive Position Feedback Controller to Suppress a Nonlinear System Vibrations, *Symmetry* 2021, 13(2), 255. <https://doi.org/10.3390/sym13020255>
 17. Md. Mahbub Alam, **Talaat Abdelhamid**, Ahmad Sohankar, Effect of cylinder corner radius and attack angle on heat transfer and flow topology, *International Journal of Mechanical Sciences*, 175 (2020) 105566.
<https://doi.org/10.1016/j.ijmecsci.2020.105566>
 18. **Talaat Abdelhamid** and Md. Mahbub Alam, Vortex shedding and heat transfer dependence on low Reynolds numbers, the 1st International Symposium on Recent Advances in Vortex-Induced Vibrations Tianjin, China.
 19. **Talaat Abdelhamid**, Simultaneous identification of the spatio-temporal dependent heat transfer coefficient and spatially dependent heat flux using a MCGM in a parabolic system, *Journal of Computational and Applied Mathematics*, 32, 164 -176, 2017. <https://doi.org/10.1016/j.cam.2017.06.031>
 20. Daijun Jiang and **Talaat Abdelhamid**, Simultaneous identification of Robin coefficient and heat flux in an elliptic system, *International Journal of Computer Mathematics*, 94 (1), 1-12, 2017.
<http://dx.doi.org/10.1080/00207160.2015.1099634>
 21. **Talaat Abdelhamid**, Xiaomao Deng, and Rongliang Chen, A new method for simultaneously reconstructing the space-time dependent Robin coefficient and heat flux in a parabolic system, *International Journal of Numerical Analysis and Modeling*, 14 (6), pp 893–915, 2017. <https://doi.org/10.1016/j.cam.2017.06.031>
 22. Ammar H. Elsheikh, Swellam W. Sharshir, A. S. Ismail, Ravishankar Sathiyamurthy, **Talaat Abdelhamid**, Elbager M. A. Edreis, A. E. Kabeel & Zhang Haiou, An artificial neural network based approach for prediction the thermal conductivity of nanofluids, *SN Applied Sciences*, 2, 235 (2020).
<https://doi.org/10.1007/s42452-019-1610-1>
 23. Ammar H. Elsheikh, Swellam W. Sharshir, Mohamed Kamal Ahmed Ali, J. Shaib, Elbager M. A. Edreis, **Talaat Abdelhamid**, Chun Du, Zhang Haiou. Thin film

- technology for solar steam generation: A new dawn, *Solar Energy*, 177 (2019) 561–575. <https://doi.org/10.1016/j.solener.2018.11.058>
24. **Talaat Abdelhamid**, A.H. Elsheikh, Ahmed Elazab, S.W. Sharshir, and Ehab S. Selima, Daijun Jiang, Simultaneous reconstruction of the time-dependent Robin coefficient and heat flux in heat conduction problems, *Inverse Problems in Science and Engineering*, 26(9), 1231-1248, **2017**.
<https://doi.org/10.1080/17415977.2017.1391243>
 25. Swellam W. Sharshir, Guilong Peng, A.H. Elsheikh, Elbager M.A. Edreis, Mohamed A. Eltawil, **Talaat Abdelhamid**, A.E. Kabeel, Jianfeng Zang, Nuo Yang, Energy and exergy analysis of solar stills with micro/nano particles: A comparative study, *Energy Conversion and Management* 177 (2018) 363–375.
<https://doi.org/10.1016/j.enconman.2018.09.074>
 26. **Talaat Abdelhamid** and Olatunji Mumini Omisore, An efficient method for simultaneously reconstructing Robin coefficient and heat flux in an elliptic equation using a MCGM, *WSEAS Transactions on Heat and Mass Transfer*, Vol. 12, 122-135, 2017.
<https://www.wseas.org/multimedia/journals/heat/2017/a305912-154.pdf>
 27. Ehab S. Selima, Y. Mao, X. Yao, Adel M. Morad, **Talaat Abdelhamid**, B. Selim, Applicable symbolic computations on dynamics of small-amplitude long waves and Davey–Stewartson equations in finite water depth, *Applied Mathematical Modelling* 57, 2018. <https://doi.org/10.1016/j.apm.2018.01.017>
 28. **Talaat Abdelhamid**, Meknani Bassem, Asmaa A. Amer, Ahmed Nagah, Optimal Control for Systems Described by Semi-linear Parabolic Equations, *WSEAS Transactions on Mathematics*, Vol.17, 58-64, 2018.
<https://www.wseas.org/multimedia/journals/mathematics/2018/a165906-036.pdf>
 29. Olatunji Mumini Omisore , Shipeng Han, Lingxue Ren, Ahamed Elazab, **Talaat Abdelhamid**, Hui Li, Nureni Ayofe Azeez, and Lei Wang, “Deeply-Learnt Damped Least-Squares Method for Inverse Kinematics of Snake-Like Robots”, *Neural Networks*, Elsevier, 107 (2018): 34-47, 2018.
<https://doi.org/10.1016/j.neunet.2018.06.018>

30. Ahmed Elazab, Hongmin Ba, Yousry M. Abdulazeem, **Talaat Abdelhamid**, Sijie Zhou, Kelvin K. L. Wong, and Qingmao Hu, Post-Surgery Glioma Growth Modeling from Magnetic Resonance Images for Patients with Treatment, Scientific Reports, 7, 1222, 2017. <https://www.nature.com/articles/s41598-017-01189-2>
31. **Talaat Abdelhamid** and Mahmoud H. Farag, Numerical study for constrained optimal control problems of parabolic systems, Numerical Methods and Applications, Lab Lambert Academic publishing, Feb 2015. (*Book*). <https://www.walmart.com/ip/Numerical-Study-for-Optimal-Control-Problems-of-Parabolic-Systems-9783848430482/793815739>
32. M. H. Farag and **Talaat Abdelhamid**, A combined exterior penalty function conjugate gradient algorithm for a class of constrained optimal control quasilinear parabolic systems, Information Theories and Applications, 20(2), 122-130, 2013.
33. M. H. Farag, **Talaat Abdelhamid**, and E. M. Kamal, Existence and uniqueness solution of a class of quasilinear parabolic boundary control problems, CUBO A Mathematical Journal, 15(2), 111–119, June 2013. <http://dx.doi.org/10.4067/S0719-06462013000200011>
34. M. H. Farag, **Talaat Abdelhamid**, E. M. Kamal, Well-posedness of a quasilinear parabolic optimal control problem, International Journal of Pure and Applied Mathematics 76 (2), 157-166, 2012. <https://ijpam.eu/contents/2012-76-2/1/1.pdf>

A REFEREE IN DIFFERENT INTERNATIONAL JOURNALS

- Inverse problems
<http://iopscience.iop.org/journal/0266-5611>
- Inverse Problems in Science and Engineering
<http://www.tandfonline.com/toc/gipe20/current>
- International Journal of Computer Mathematics
<http://www.tandfonline.com/toc/gcom20/current>
- Mathematics and Computers in Simulation
<https://www.sciencedirect.com/journal/mathematics-and-computers-in-simulation>
- International Journal of Heat and Mass Transfer

<https://www.sciencedirect.com/journal/international-journal-of-heat-and-mass-transfer>

- Physics of fluids
<https://aip.scitation.org/journal/phf>
- And other reputable International Journals in the area of my research.

REFERENCES:

1. **Prof. Jun Zou**, Department of Mathematics, The Chinese University of Hong Kong, Shatin, Hong Kong.
E-mail: zou@math.cuhk.edu.hk
2. **Prof. Xiao-Chuan Cai**, Department of Computer Science, University of Colorado Boulder, USA.
E-mail: cai@cs.colorado.edu
3. **Prof. Daijun Jiang**, School of Mathematics and Statistics, Central China Normal University, Wuhan, PR China.
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4. **Prof. Rongliang Chen**, Shenzhen Institutes of Advanced Technology, Chinese Academy of Science, Shenzhen, China.
E-mail: rl.chen@siat.ac.cn
5. **Prof. Md. Mahbub Alam**, Institute for Turbulence-Noise-Vibration Interaction and Control, Harbin Institute of Technology (Shenzhen), China
alam@hit.edu.cn
6. **Prof. Mahmoud Abdel-Aty**, Former Chairman of Mathematics, Zewail City of Science and technology, Egypt. amisaty@gmail.com
mabdelaty@zewailcity.edu.eg

Supervision of Postgraduate Students:

- **Ahmed M. Abdelmagid**, An artificial intelligence-based SCD algorithms development for Skin Cancer Detection, 2022.
- **Ahmed G. Rahma**, Blood flow CFD simulation on a cerebral artery of a stroke patient, 2021.
- **Tasneem Mohamed**, Deep Learning-Based Modeling for Image Reconstruction in Inverse Problems, 2023.