

CURRICULUM VITAE

Abdelraheem Mahmoud Aly AbdAllah, PhD

Current position:

- Associate Professor in Mathematics, King Khalid University, Abha, Saudi Arabia.

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Previous positions:

December 2017-

- Associate Professor in Mathematics, South Valley University, Qena, Egypt.

November, 2012- November 2017

- Assistant Professor in Mathematics, South Valley University, Qena, Egypt.

April, 2016- February 2017

- Postdoctoral Fellow in School of Mechanical Engineering, University of Ulsan, South Korea.

September, 2013- August 2015

- JSPS Postdoctoral Fellow in Faculty of Engineering, Kyushu University, Japan.

January, 2013- August, 2013

- Postdoctoral fellow in School of Mechanical Engineering, University of Ulsan, South Korea.

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Office address in Egypt: Department of Mathematics, Faculty of Science, South Valley University, Qena, Egypt.
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Research Interests

Computational Fluid Dynamics: Fluid-Structure Interaction, Smoothed Particle Hydrodynamics (SPH) Method, Fluid Flow through Porous Media, Parallel Implementation of Particle-Based Methods, Heat and Mass Transfer, Nanofluid.

Research Projects:

1- King Khalid Project -2017 (G. R. P-003-38)

2- King Khalid Project -2018 (G. R. P-153-39)

Educations

Bachelor (June 2004)

Faculty of Science, South Valley University, Qena, Egypt

Major : Mathematics.

Degree : Very good (80.50%)

Advisor : Prof. Ahmed Safwat Abdelrady

Master (November 2008)

Department of Mathematics, Faculty of Science, South Valley University, Qena, Egypt

Major : Mathematics.

Advisor : Prof. Mohamed Ahmed Mansour

Thesis : EFFECT OF CHEMICAL REACTIONS ON HEAT AND MASS TRANSFER FOR BOUNDARY LAYER FLOW THROUGH POROUS MEDIA.

Ph.D (September 2012)

Department of Civil and structural Engineering, Graduate School of Engineering, Kyushu University, Japan.

Major : Computational Fluid Dynamics

Advisor : Prof. YOSHIMI SONODA & Prof. Mitsuteru ASAI

Thesis : AN IMPROVED INCOMPRESSIBLE SMOOTHED PARTICLE HYDRODYNAMICS TO SIMULATE FLUID-SOIL-STRUCTURE INTERACTIONS.

Postdoctoral Fellow (January 2013-August, 2013 and April, 2016- February 2017)

Computational Fluid Dynamics Laboratory, School of Mechanical Engineering, University of Ulsan, South Korea.

Major : Computational Fluid Dynamics

Advisor : Prof. Sang-Wook Lee

Research : Modelling of blood flow in Human Coronary Arteries using particle methods.

Postdoctoral Fellow (September 2013 - August, 2015)

JSPS Postdoctoral fellow in Faculty of Engineering, Kyushu University, Japan.

Major : Computational Fluid Dynamics

Advisor : Prof. Mitsuteru ASAI

Research : Multi-physics tsunami simulation to design a disaster prevention and mitigation system.

Professional Skills:

- Coding by Fortran Programming Language (Excelent)
- Parallel Programming using Open MP and MPI
- Visualization: Micro-AVS, AVS/Express, and Paraview.

Research Experiences:

- Improve ISPH algorithm for fluid-structure interactions (FSI), free surface flows and natural/mixed convection in complex geometries, 2016, (University of Ulsan, South Korea)
- Large Scale Simulation of Fluid-Structure Interaction (FSI) using a Parallel Implementation of Incompressible Smoothed Particle Hydrodynamics (ISPH) Method, 2015 (Kyushu University, Japan).
- Developing ISPH method for large scale wave structure interaction with porous structures, 2014 (Kyushu University, Japan)
- Modelling of blood flow in Human Coronary Arteries 2013 (University of Ulsan, South Korea).
- Modelling of fluid-structure soil foundation interaction using SPH method (2011-2012).
- Simulation of fluid disaster (Tsunami) using SPH method (2010-2011) (Kyushu University, Japan).
- Modelling of free surface flows using meshfree method (SPH) (2009-2010) (Kyushu University, Japan).
- Study the heat and mass transfer in Nanofluid (2008-2009) (South Valley University, Egypt).
- Study the effect of chemical reaction on heat and mass transfer for boundary layer flow (2007-2008) (South Valley University, Egypt)
- Boundary layer flow (2006-2007) (South Valley University, Egypt)
- Study master courses (2005-2006) (South Valley University, Egypt)

Teaching Experiences:

- Numerical Analysis, Fluid Dynamics, Ordinary Differential Equations (ODE)- Partial Differeintial Equations (PDE), Multi Integration, Multi Differentiation, Dynamic of Body and Partcle in Space, Operating Systems, Finite Maths., Fields, Fortran Programming, Parallel Programmimg, Statistics & Propability, Mechanics I, II, Mathematical Methods.

Publication Highlights:

- Article Ranked No.12 the Top 25 Most Downloaded Articles (Elsevier, 2016): "**A. M. Aly**, Double-diffusive natural convection in an enclosure including/excluding sloshing rod using a stabilized ISPH method" International Communications in Heat and Mass Transfer, Vol. 73, 2016, PP. 84–99.

Honors and Awards

- **Egypt Encouragement Award in Field of Science (Mathematics), 2017.**
- Full scholarship for Doctor course by Japanese government (MONBUKAGAKUSHO: MEXT), 2009.
- Postdoctoral fellow in Ulsan University, South Korea, 2013.
- JSPS postdoctoral fellow in Kyushu University, Japan, 2014.
- Postdoctoral fellow in Ulsan University, South Korea, 2016.
- Scientific publishing prizes from South Valley University (2012,2014,2015,2016,2017,2018)

Google scholar citation: <http://scholar.google.com/citations?user=uVcI0JEAAAAJ&hl=en>

Scopus: (Aly, Abdelraheem M.): <https://www.scopus.com/authid/detail.uri?authorId=25624343900> (H-index=12)

Publications:

- 1) **Abdelraheem M. Aly**, and Mitsuteru Asai. "Water entry of decelerating spheres simulations using improved ISPH method." Journal of Hydrodynamics 30.6 (2018): 1120-1133.
- 2) **Abdelraheem M. Aly**, and Z. A. S. Raizah. "Incompressible smoothed particle hydrodynamics (ISPH) method for natural convection in a nanofluid-filled cavity including rotating solid structures." International Journal of Mechanical Sciences 146 (2018): 125-140.
- 3) **Abdelraheem M. Aly**, Z. A. S. Raizah, and Sameh Elsayed Ahmed. "NATURAL CONVECTION IN AN ENCLOSURE SATURATED WITH MULTILAYER POROUS MEDIUM AND NANOFUID OVER CIRCULAR CYLINDERS: ENTROPY GENERATION." Journal of Porous

Media 21.10 (2018).

- 4) ZAS Raizah, **AM Aly**, SE Ahmed, Natural convection flow of a power-law non-Newtonian nanofluid in inclined open shallow cavities filled with porous media, *International Journal of Mechanical Sciences*, 140, pp. 376-393, 2018.
- 5) **AM Aly**, ZAS Raizah, SE Ahmed, Mixed Convection in a Cavity Saturated with Wavy Layer Porous Medium: Entropy Generation, *Journal of Thermophysics and Heat Transfer*, pp. 1-17, 2018.
- 6) **AM Aly**, SE Ahmed, ZAS Raizah, DOUBLE-DIFFUSIVE NATURAL CONVECTION IN A SQUARE POROUS CAVITY WITH SINUSOIDAL DISTRIBUTIONS SIDE WALLS FILLED WITH A NANOFLUID, *Journal of Porous Media*, vol. 21 (2), pp. 101-122, 2018.
- 7) Minh Tuan Nguyen, **Abdelraheem M. Aly** and Sang-Wook Lee, ISPH modeling of natural convection heat transfer with an analytical kernel renormalization factor, *Meccanica*, 2018.
- 8) Minh Tuan Nguyen, **Abdelraheem M. Aly** and Sang-Wook Lee, A numerical study on unsteady natural/mixed convection in a cavity with fixed and moving rigid bodies using the ISPH method, *International Journal of Numerical Methods for Heat & Fluid Flow*, Vol. 28 No. 3, 2018, pp. 684-703
- 9) Minh Tuan Nguyen, **Abdelraheem M. Aly** and Sang-Wook Lee, Improved wall boundary conditions in the incompressible smoothed particle hydrodynamics method, *International Journal of Numerical Methods for Heat & Fluid Flow*, Vol. 28 No. 3, 2018, pp. 704-725.
- 10) **Abdelraheem M. Aly**, Natural Convection over Circular Cylinders in a Porous Enclosure Filled with a Nanofluid under Thermo-Diffusion Effects, *Journal of the Taiwan Institute of Chemical Engineers*, Volume 70, 2017, Pages 88–103
- 11) **Abdelraheem M. Aly**, DOUBLE-DIFFUSIVE NATURAL CONVECTION IN A NON-DARCY POROUS CAVITY FILLED WITH NANOFLUID UNDER THE EFFECTS OF CHEMICAL REACTION, *Journal of Porous Media*, 20(2) (2017) 111-126.
- 12) Minh Tuan Nguyen, **Abdelraheem M. Aly** and Sang-Wook Lee, Effect of wavy interface on natural convection of a nanofluid in a cavity saturated with a partially layered non-Darcy porous medium using ISPH method, *NUMERICAL HEAT TRANSFER, PART A*, 2017, VOL. 72, NO. 1, 68–88
- 13) Mahmoud M. Elgendi and **Abdelraheem M. Aly**, Numerical Simulation of Natural Convection using Unsteady Compressible Navier-Stokes Equations, accepted in *International Journal of Numerical Methods for Heat & Fluid Flow*.
- 14) **Abdelraheem M. Aly**, Ali Chamkha, Sang-Wook Lee, and Ali Al-Mudhaf, “On Mixed Convection in an Inclined Lid-Driven Cavity with Sinusoidal Heated Walls using ISPH Method”, *Computational Thermal Sciences: An International Journal* , Volume 8, 2016 Issue 4, pages 337-354.
- 15) A.M. Rashad, M.M. Rashidi, Giulio Lorenzini, Sameh E. Ahmed, **Abdelraheem M. Aly**, Magnetic field and internal heat generation effects on the free convection in a rectangular cavity filled with a porous medium saturated with Cu–water nanofluid, *International Journal of Heat and Mass Transfer*, Volume 104, 2017, Pages 878–889.
- 16) Minh Tuan Nguyen, **Abdelraheem M. Aly** and Sang-Wook Lee, Unsteady natural convection heat transfer in a nanofluid-filled square cavity with various heat source conditions, *Advances in Mechanical Engineering* 2016, Vol. 8(5) 1–18.
- 17) **Abdelraheem Mahmoud Aly**, Mitsuteru ASAI, (2016) "ISPH method for double-diffusive natural convection under cross-diffusion effects in an anisotropic porous cavity /annulus", *International Journal of Numerical Methods for Heat & Fluid Flow*, Vol. 26 Issue: 1, pp.235-268
- 18) **Abdelraheem M. Aly**, Zehba A.S. Raizah, Double-diffusive natural convection in an enclosure filled with nanofluid using ISPH method, *Alexandria Engineering Journal* (2016) 55, 3037–3052.
- 19) Mansour, M. A.; Ahmed, Sameh E.; **Aly, A. M.**; Rashad, A. M. MHD Effects on Entropy Generation and Heat Transfer of Nanofluid Flows in Enclosures, *Journal of Nanofluids*, Volume

5, Number 4, August 2016, pp. 595-605 (11)

- 20) **Abdelraheem M. Aly**, Double-diffusive natural convection in an enclosure including/excluding sloshing rod using a stabilized ISPH method” International Communications in Heat and Mass Transfer, Vol. 73, 2016, PP. 84–99.
- 21) **Abdelraheem M. Aly** and Mitsuteru Asai, Three-Dimensional Incompressible Smoothed Particle Hydrodynamics for Simulating Fluid Flows Through Porous Structures, Transport in Porous Media, 2015 , Volume 110, Issue 3 , pp 483–502
- 22) **Abdelraheem M. Aly** and Sameh E. Ahmed, Double-Diffusive Natural Convective Flow of a Nanofluid Over a Vertical Cylinder, Journal of Nanofluids, Volume 5, Number 1, March 2016, pp. 110-119(10).
- 23) Sameh E. Ahmed, **Abdelraheem M. Aly** and M.A. Mansour, MHD Mixed Bioconvection Stagnation Point Flow of Nanofluids Towards a Stretching Surface, Journal of Nanofluids, Volume 4, Number 4, December 2015, pp. 528-535(8).
- 24) M. A. Mansour, S. E. Ahmed, **A. M. Aly**, S.-L. Lee, FLUID FLOW AND HEAT TRANSFER CHARACTERISTICS OF NATURAL CONVECTION IN SQUARE NANOFLUID-FILLED ENCLOSURES SATURATED POROUS MEDIA DUE TO DISCRETE SOURCE-SINKS PAIR, Latin American Applied Research, Vol. 45, No. 2, April 2015.
- 25) **Abdelraheem M. Aly**, Mitsuteru Asai and Ali J. Chamkha. Analysis of Unsteady Mixed Convection in Lid-Driven Cavity Included Circular Cylinders Motion Using an Incompressible Smoothed Particle Hydrodynamics Method. International Journal of Numerical Methods for Heat & Fluid Flow, 2015, Vol. 25 Issue: 8, pp.2000-2021.
- 26) **Abdelraheem M. Aly**, Minh Tuan Nguyen and Sang-Wook Lee. Numerical Analysis of Liquid Sloshing Using the Incompressible Smoothed Particle Hydrodynamics Method, Advances in Mechanical Engineering, 2014. Article ID 765741.
- 27) **Abdelraheem M. Aly**, Modeling of multi-phase flows and natural convection in a square cavity using an Incompressible Smoothed Particle Hydrodynamics, International journal of numerical methods for heat & fluid flow 25 (3), 2015.
- 28) **Abdelraheem M. Aly**, Incompressible smoothed particle hydrodynamics simulations on free surface flows, International Journal of Industrial Mathematics (IJIM) 7 (1), 99-106, 2015.
- 29) **Abdelraheem M. Aly** and Mitsuteru Asai, Incompressible Smoothed Particle Hydrodynamics Simulations of Fluid-Structure Interaction on Free Surface Flows, International Journal of Fluid Mechanics Research, Vol. 41 (6) pages 471-484, 2014.
- 30) **Abdelraheem M. Aly** and Mitsuteru Asai, Modelling of non-Darcy Flows through porous media using an extended Incompressible Smoothed Particle Hydrodynamics, Numerical Heat Transfer, Part B: Fundamentals, Volume: 67, Issue: 03, pages 255 – 279, 2014.
- 31) **Abdelraheem M. Aly** and S. E. Ahmed, An Incompressible Smoothed Particle Hydrodynamics Method for Natural/Mixed convection in a non-Darcy anisotropic porous medium, International Journal of Heat and Mass Transfer 77, 1155–1168, 2014.
- 32) **Abdelraheem M. Aly** and Sang-Wook Lee, Numerical simulations of impact flows with incompressible smoothed particle hydrodynamics, Journal of Mechanical Science and Technology 28 (6), 2179-2188., 2014.
- 33) Minh Tuan Nguyen, **Abdelraheem M. Aly** and Sang-Wook Lee, Natural Convection in Non-Darcy Porous Cavity Filled With Cu-Water Nanofluid Using Characteristic-Based Split Procedure in Finite Element Method. Numerical Heat Transfer, Part A: Applications , Volume: 67, Issue: 02, pages 224 – 247, 2014.
- 34) S. E. Ahmed and **Abdelraheem M. Aly**, NON-DARCIAN AND ANISOTROPIC EFFECTS ON THE CONJUGATE HEAT TRANSFER IN A POROUS ENCLOSURE WITH FINITE THICKNESS WALLS, Journal of Porous Media Vol. 17, 4, 2014.

- 35) **Abdelraheem M. Aly**, M. A. Mansour, M. A. Y. Bakier, STUDY THE NATURAL CONVECTION COOLING OF A LOCALIZED HEAT SOURCE AT THE BOTTOM OF A SQUARE CAVITY USING SPH METHOD, *International Journal of Energy and Technology*, Vol. 4, 2, pp. 1-8, 2012.
- 36) **Abdelraheem M. ALY**, Mitsuteru ASAI and Yoshimi SONODA, Free falling rigid body into water by a stabilized incompressible SPH method. *Ocean Systems Engineering, an international journal*, Vol. 1, No. 3, 2011.08.
- 37) **Abdelraheem M. ALY**, Mitsuteru ASAI and Yoshimi SONODA, Modelling of surface tension force for free surface flows in ISPH method, *International Journal of Numerical Methods for Heat and Fluid Flow*, Vol. 23, No. 3, 2013.
- 38) Mitsuteru ASAI, **Abdelraheem M. ALY**, Yoshimi SONODA and Yuzuru SAKAI. A stabilized incompressible SPH method by relaxing the density invariance conditio. *Journal of Applied Mathematics*. Vol. 2012 (2012), pp.Article ID 139583, 24 pages, 2012.
- 39) Ali J. Chamkha, **Abdelraheem M. Aly** and M. A. Mansour, "Effects of Chemical Reaction and Pressure Work on Free Convection over a Stretching Cone Embedded in a Porous Medium." *International Journal of Industrial Mathematics (IJIM)*, 4 (4), Article ID IJIM-00261, 15, 2012.
- 40) Ali J. Chamkha, A. M. Rashad and **A. M. Aly**, "Transient Natural Convection Flow Of a Nanofluid Over a Vertical Cylinder. " *Meccanica* 48 (1), 71-81, 2013.
- 41) Ali J. Chamkha, A. M. Rashad and **Abdelraheem M. Aly**, "NON-DARCY NATURAL CONVECTION OF A NANOFLUID ABOUT A PERMEABLE VERTICAL CONE EMBEDDED IN A POROUS MEDIUM." *International Journal of Microscale and Nanoscale Thermal and Fluid Transport Phenomena*, Volume 4, pp. 99-114, 2013.
- 42) Ali J. Chamkha and **Abdelraheem M. Aly**, Heat and Mass Transfer by Free Convective Flow of a Polar Fluid along a Sphere Embedded in a Porous Medium, *Journal of Energy, Heat and Mass Transfer*, vol. 34, pp. 19-47, 2012
- 43) **Abdelraheem M. Aly**, M. A. Mansour, Ali J. Chamkha. Effects of sores and Dufour numbers on free convection over isothermal and adiabatic stretching surfaces embedded in porous media, *Journal of porous media*, Vol 14, pages **67-72** (2011) **DOI**: 10.1615/jpormedia.v14.i1.50.
- 44) Ali J. Chamkha and **A. M. Aly**, MHD free convection flow of a nanofluid past a vertical plate in the presence of heat generation or absorption effects. *Chemical Engineering Communications*, Volume 198, Issue 3, 2010, Pages 425-441.
- 45) Ali J. Chamkha and **A. M. Aly**, Heat and mass transfer in stagnation-point flow of a polar fluid towards a stretching surface in porous media in the presence of Soret, Dufour and chemical reaction effects. *Chemical Engineering Communications*, Volume 198, Issue 2, 2010, pages 214-234.
- 46) Ali J. Chamkha, **Abdelraheem M. Aly** and Humood F. Al-Mudhaf. Laminar MHD Mixed Convection Flow of a Nanofluid along a Stretching Permeable Surface in the Presence of Heat Generation or Absorption Effects. *International Journal of Microscale and Nanoscale Thermal and Fluid Transport Phenomena*, Volume 2, Issue 1, 2011.
- 47) A J. Chamkha, **A.M. Aly**, M.A. Mansour, Unsteady natural convective power-law fluid flow past a vertical plate embedded in a non-Darcian porous medium in the presence of a homogeneous chemical reaction. *Nonlinear Analysis: Modelling and Control*, 2010, Vol. 15, No. 2, 139–154.
- 48) Ali J. Chamkha, M. F. Al-Amin, **Abdelraheem M. Aly**, Unsteady double-diffusive natural convective MHD flow along a vertical cylinder in the presence of chemical reaction, thermal radiation and Soret and Dufour effects. *Journal of Naval Architecture and Marine Engineering*, Vol 8, No 1 (2011).
- 49) M. A. Mansour, N. F. El-Anssary and **A. M. Aly**. Free Convection Flow past an Isothermal, Adiabatic and Plane Plume Inclined Stretching Surfaces in a Porous Medium. *Int. J. Fluid Mechanics Research* , Vol (36) 4, pp. 300-318 (2009).
- 50) A J. Chamkha, M. A. Mansour and **Abdelraheem. M. Aly**. Unsteady MHD Free Convective Heat

and Mass Transfer from a Vertical Porous Plate with Hall Current, Thermal Radiation and Chemical Reaction Effects. *International Journal for Numerical Methods in Fluids*, Volume 65, Issue 4, pages 432–447, (2011).

- 51) A. J. Chamkha, **A. M. Aly** and M. A. Mansour. Similarity Solution for Unsteady Heat and Mass Transfer from a Stretching Surface Embedded in a Porous Medium with Suction/Injection and Chemical Reaction Effect. *Chemical Engineering Communications*, Volume 197, Issue 6, 2010.
- 52) **Abdelraheem Mahmoud Aly**, Mohammed Ahmed Mansour, Rama Subba Reddy Gorla, Effects of chemical reaction, viscous dissipation and pressure work on MHD free convection flow in a porous medium. *Trends in chemical engineering*, Volume 13, pages 65-76, 2010.
- 53) **Abdelraheem Mahmoud Aly** and Ali Chamkha, Non-Similar Solutions for Heat and Mass Transfer from a Surface Embedded in a Porous Medium for Two Prescribed Thermal and Solutal Boundary Conditions. *Chemical Reactor Engineering: Vol. 8: A56*. Available at: <http://www.bepress.com/ijcre/vol8/A56>.
- 54) Mansour, M. A. **Aly, A. M.** El-Anssary, N. F. Some free convection flows over a stretching cone embedded in porous media. Vol. 14, no. 3, 2009.
- 55) M. A. Mansour, N. F. El-Anssary and **A. M. Aly**. Effects of Chemical Reaction and Thermal Stratification on MHD Free Convective Heat and Mass Transfer over a Vertical Stretching Surface Embedded in Porous Media Considering Soret and Dufour Numbers. *Chemical engineering journal* 145 (2008) 340-345.
- 56) M. A. Mansour, N. F. El-Anssary and **A. M. Aly**. Effect of Chemical Reaction and Viscous Dissipation on MHD natural convection flows Saturated in Porous Media with Suction or Injection. *Int. J. of Applied Math and Mech*, vol. 4(2), pp. 60-76, (2008).
- 57) M. A. Mansour, N. F. El-Anssary, **A. M. Aly** and Rama Subba Reddy Gorla. Chemical reaction and magnetohydrodynamic effects on free convection flow past an inclined surface in a porous medium. *Journal of porous media* Vol(13), Issue 1 (2010) 102. DOI: 10.1615/JPorMedia.v13.i1.
- 58) M. A. Mansour , A. S. Abdel-Rady , N. F. El-Anssary and **A. M Aly**, Coupled Heat and Mass Transfer in Darcy Free Convection from a Heated Vertical Plate Embedded in Porous Media under the Effect of Chemical Reaction. *Int. J. of Appl. Math and Mech*. 5(2): 83-96, 2009.
- 59) M. A. Mansour and **A. M. Aly**. Effects Of Chemical Reactions and Radiation On MHD Free Convective Heat And Mass Transfer From A Horizontal Cylinder Of Elliptic Cross Section Saturated In Porous Media With Considering Suction Or Injection. *Int. J. of Appl. Math. and Mech*. 5(2): 72-82, 2009.

Book Chapters:

- 1) **Abdelraheem M. Aly** and Mitsuteru Asai, DOUBLE-DIFFUSIVE NATURAL CONVECTION WITH CROSS-DIFFUSION EFFECTS IN AN ANISOTROPIC POROUS ENCLOSURE USING ISPH METHOD, Accepted for publication in book, "Mass Transfer" BOOK EDITOR: Marek Soleczi; INTECH Publish.
- 2) M.A. Mansour, , N.F. El-Anssary, **A. M. Aly**, Rama Subba Gorla. Chemical Reaction and MHD Effects on Free Convection Flow Past an Inclined Surface in a Porous Medium, **Progress in Porous Media Research**, Nova science publishers, pp. 503-524)
https://www.novapublishers.com/catalog/product_info.php?products_id=8793&osCsid=0582d6f05c3b5d76a9ab97cdd53ecb33
- 3) Chamkha, A.J., Rashad, **A.M., Aly**, Non-darcy natural convection of a nanofluid about a permeable vertical cone embedded in a porous medium, *Progress in Microscale and Nanoscale Thermal and Fluid Sciences*, 2015.

Presentations

- 1) **Abdelraheem M. Aly**, Minh Tuan Nguyen, Sang-Wook Lee, Improved Wall Boundary Conditions in Incompressible Smoothed Particle Hydrodynamics Method Using Analytical Kernel Renormalization, International Conference on Computational Methods in Engineering and Health Sciences, 17-18

December, 2016 (ICCMEH-2016), KitaKyushu, Japan.

- 2) **Abdelraheem M. Aly**, Minh Tuan Nguyen, Sang-Wook Lee, Unsteady Natural/Mixed Convection in Cavity with Fixed and Moving Rigid Body Using ISPH Method, ISERD - International Conference on Recent Innovations in Engineering and Technology (ICRIET) Cairo, Egypt. 6th-7th July,2016. **(Excellent paper award)**
- 3) **Abdelraheem M. Aly**, Minh Tuan Nguyen, Sang-Wook Lee, “Nonlinear Free Surface Flow Simulations Using Smoothed Particle Hydrodynamics”. The 17th International Conference on Computational Fluid Dynamics, Barcelona, Spain, Oct. 26, 2015.
- 4) Tomotaka Nogami, Mitsuteru Asai, Toshihiro Morimoto, and **Aly Abdelraheem**, A UNIFIED UMERICAL ANALYSIS OF FREE SURFACE FLOW AND SEEPAGE FLOW BY USING A PARTICLE METHOD in 2nd International Conference on Civil and Building Engineering Informatics (ICCBEI 2015).
- 5) T. Nogami, M. Asai and **A. Abdelraheem**, Clarification of soil scour and seepage flow by using a particle method, IV International Conference on Particle-Based Methods (PARTICLES 2015), 28-30 September 2015 in Barcelona, Spain.
- 6) Tetsuro Goda, Mitsuteru Asai, **Abdelraheem M. Aly** and Nur’Ain Idris, Numerical evaluation of Tsunami fluid force acting on Tsunami refuge building by using a particle method. Advances in Civil, Enviromental and Materials Rsearch (ACEM14), Busan, Korea, August, 2014.
- 7) Yoshiya Miyagawa, Mitsuteru Asai, **Abdelraheem M. Aly**, Fundamental study for wash out simulation of bridge girders by using a particle method, Advances in Civil, Enviromental and Materials Rsearch (ACEM14), Busan, Korea, August, 2014.
- 8) **Abdelraheem M. Aly**, Mitsuteru Asai, Simulation of Fluid-Structure Interaction using an Incompressible Smoothed Particle Hydrodynamics, Advances in Civil, Enviromental and Materials Rsearch (ACEM14), Busan, Korea, August, 2014.
- 9) **Abdelraheem M. Aly** and Mitsuteru Asai, Large Scale Simulation of Fluid-Structure Interaction using an Incompressible Smoothed Particle Hydrodynamics, 11th World Congress on Computational Mechanics (WCCM XI), Barcelona, Spain, 2014.
- 10) **Abdelraheem M. Aly** and Mitsuteru Asai, Simulation of Fluid-Structure Interaction in Flood Disasters using ISPH Method, The 1st International Conference on Computational Engineering and Science for Safety and Environmental Problems (COMPSAFE), 13-16 April 2014, Sendai, Japan.
- 11) **Abdelraheem M. Aly** and Mitsuteru Asai, Simulation of Fluid-Structure Interaction using an Incompressible Smoothed Particle Hydrodynamics, Proceedings of Computational Engineering Conference (JSCES), Vol. 19, 2014 June, Japan.
- 12) **Abdelraheem M. Aly** and Sang-Wook Lee, Incompressible Smoothed Particle Hydrodynamics simulations on complex free surface flows, The 9th Pacific symposium on Flow Visualization and Image Processing, Busan, Korea, 2013.
- 13) Minh Tuan Nguyen, **Abdelraheem M. Aly** and Sang-Wook Lee, Simulation of Nonlinear Liquid sloshing using Incompressible Smoothed Particle Hydrodynamics, The 9th Pacific symposium on Flow Visualization and Image Processing, Busan, Korea, 2013.
- 14) Minh Tuan Nguyen, **Abdelraheem M. Aly** and Sang-Wook Lee, Unsteady natural convection in a nanofluid-filled square cavity with a heat source at the bottom using characteristic-based split scheme, the 14th Asia Congress of Fluid Mechanics - 14ACFM October 15 - 19, 2013; Hanoi and Halong, Vietnam, 2013.
- 15) Mitsuteru Asai, Keisuke Fujimoto, **Abdelraheem M. Aly**, Yoshimi Sonoda, Fluid-Soil-Structure coupling analysis for tsunami disaster simulation,Proceeding of KSME-JSME joint symposium on computational mechanics & CAE 2012,pp.11-16,2012.09.
- 16) **Abdelraheem M. ALY**, Mitsuteru ASAI and Yoshimi SONODA, Study of violent water induced impact problems using ISPH method. Proceeding of the SI11 Fukuoka, 16-18 November 2011, Japan.
- 17) **Abdelraheem M. ALY**, Mitsuteru ASAI and Yoshimi SONODA. Floating rigid body simulation in free surface flow using a stabilized incompressible SPH method.. Proceedings of the 2011 World Congress on Advances in Structural Engineering and Mechanics, pp.4460-4469,2011.09.

- 18) Mitsuteru ASAI, **Abdelraheem M. Aly** and Yoshimi SONODA. ISPH-FEM coupling simulator for the FSI problems. Proceeding of the 6th SPHERIC SPH workshop, pp.201-208, 2011.06.
- 19) **Abdelraheem M. Aly**, Mitsuteru ASAI, Yoshimi Sonoda. Modeling of the free surface tension force by using the ISPH. Japan Society for Computational Engineering and Science Conference 16th, Japan 2011.05.25.
- 20) Takanori Hayashi, Mitsuteru ASAI, **Abdelraheem M. Aly**, Yoshimi Sonoda, Validation and accuracy assessment in ISPH method for impact force and fluid stabilization. (In japanesse) Impact of structural issues symposium 10th, 2010.12.10.
- 21) Mitsuteru ASAI, Takanori Hayashi, **Abdelraheem M. Aly**, Yoshimi Sonoda. Analysis of large deformation fluid-structure interaction by FEM method for grain boundaries ISPH Ghost (In japanesse), Japan Society for Computational Engineering and Science Conference 16th, Japan 2011.05.25.
- 22) Mitsuteru ASAI, Keisuke Fujimoto, **Abdelraheem M. Aly**, Yoshimi Sonoda. Fluid-Soil-Structure Coupling analysis for Tsunami disastre simulation. KSME-JSME Joint Symposium on CM & CAE 2012.
- 23) **Abdelraheem M. ALY**, Mitsuteru ASAI and Yoshimi SONODA. Fluid-Structure- Soil foundation interaction simulation by 3D-ISPH. Proceedings of Computational Engineering Conference (JSCES), Vol. 17, 2012.

Invited Speaker:

- 1) **Abdelraheem M. ALY**, Mitsuteru ASAI, Applications of ISPH Method in Fluid-Structure Interactions, IWACOM-III (3rd International Workshops on Advances in Computational Mechanics), Tokyo, Jpapn, October 12-14, 2015.

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