



UNIVERSITAS GADJAH MADA
Faculty of Mathematics and Natural Sciences
Department of Mathematics

Sekip Utara Bulaksumur Yogyakarta 55281 Telp: +62 274 552243 Fax: +62 274 555131 Email: math@ugm.ac.id Website: <http://math.fmipa.ugm.ac.id>

STAFF HANDBOOK

Name	<i>Imam Solekhudin</i>		
Post	<i>Computational Mathematics</i>		
Academic career	<i>Initial academic appointment</i>	<i>Institution</i>	<i>Year</i>
	<i>Doctorate (Math)</i>	<i>NTU, Singapore</i>	<i>2014</i>
	<i>Master's Degree (Math)</i>	<i>UGM</i>	<i>2004</i>
	<i>Undergraduate degree (Math)</i>	<i>UGM</i>	<i>1999</i>
Employment	<i>Lecturer</i>	<i>UGM</i>	<i>2000 - Now</i>
Research and development projects over the last 5 years	<ol style="list-style-type: none"><i>1. Implementation of BEM with MATLAB for Heat Conduction and Fluid Mechanics</i> <i>April – November 2018.</i> <i>Rp. 70.000.000,-</i><i>2. A Role of Mathematics for solving infiltration problems from irrigation channels with root-water uptake in heterogeneous soils</i> <i>April – November 2018.</i> <i>Rp. 65.000.000,-</i><i>3. Mathematical modelling and simulation for pollutant spread</i> <i>April – November 2019.</i> <i>Rp. 15.000.000,-</i><i>4. Implementation of BEM with MATLAB for Heat Conduction and Fluid Mechanics</i> <i>April – November 2019.</i> <i>Rp. 80.000.000,-</i><i>5. A Role of Mathematics for solving infiltration problems from irrigation channels with root-water uptake in heterogeneous soils</i> <i>April – November 2019.</i> <i>Rp. 94.000.000,-</i>		



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	<p>6. <i>Modelling and simulation of water infiltration from an irrigation channel into soil with an impermeable layer</i></p> <p><i>April – November 2019.</i></p> <p><i>Rp. 50.000.000,-</i></p> <p>7. <i>Modelling and simulation of heat conduction in anisotropic media</i></p> <p><i>April – November 2020.</i></p> <p><i>Rp. 15.000.000,-</i></p> <p>8. <i>Modelling and simulation of infiltration problems in layered soils</i></p> <p><i>April – November 2021.</i></p> <p><i>Rp. 15.000.000,-</i></p> <p>9. <i>Numerical study of diffusion-convection problems in heterogeneous media</i></p> <p><i>April – November 2022.</i></p> <p><i>Rp. 15.000.000,-</i></p> <p>10. <i>Numerical study of engineering problems</i></p> <p><i>April – November 2022.</i></p> <p><i>Rp. 50.000.000,-</i></p> <p>11. <i>Numerical study and simulation for infiltration in layered soils with root-water uptake</i></p> <p><i>April – November 2023.</i></p> <p><i>Rp. 45.000.000,-</i></p> <p>12. <i>Modelling and simulation of infiltration in layered soils and their role for irrigation effectivity in agricultural land</i></p> <p><i>April – November 2023.</i></p> <p><i>Rp. 120.100.000,-</i></p>
<p>Industry collaborations over the last 5 years</p>	<p><i>Project title -</i></p> <p><i>Partners -</i></p>
<p>Patents and proprietary rights</p>	<p><i>Title -</i></p> <p><i>Year -</i></p>



**Important publications
over the last 5 years**

Selected recent publications from a total of approx. 35:

1. Solekhudin, I., Ang, K.-C., 2018, *A numerical method for time-dependent infiltration from periodic trapezoidal channels with different types of root-water uptake*, IAENG International Journal of Applied Mathematics 48(1), pp. 84-89
2. Solekhudin, I., Purnama, D., Malysa, N.H., Sumardi, 2018, *Characteristics of water flow in heterogeneous soils*, JP Journal of Heat and Mass Transfer 15(3), pp. 597-608
3. Munadi, Solekhudin, I., Sumardi, Zulijanto, A., 2019, *Steady water flow from different types of single irrigation channel*, JP Journal of Heat and Mass Transfer 16(1), pp. 95-106
4. Munadi, Solekhudin, I., Sumardi, Zulijanto, A., 2020, *A numerical study of steady infiltration from a single irrigation channel with an impermeable soil layer*, Engineering Letters 28(3), pp. 1-8
5. Azis, M.I., Solekhudin, I., Aswad, M.H., Jalil, A.R., 2020, *Numerical simulation of two-dimensional modified Helmholtz problems for anisotropic functionally graded materials*, Journal of King Saud University - Science 32(3), pp. 2096-2102.
6. Solekhudin, I., Zahroh, M., 2020, *A numerical study of unsteady infiltration into two-layered soil*, JP Journal of Heat and Mass Transfer 20(2), pp. 133-144.
7. Solekhudin, I., 2020, *Dual reciprocity method for steady diffusion-convection problems*, Journal of Algebra and Applied Mathematics 18(2), pp. 85-97.
8. Solekhudin, I., 2020, *Boundary interface water infiltration into layered soils using dual reciprocity methods*, Engineering Analysis with Boundary Elements 119, pp. 280-292
9. Azis, M.I., Solekhudin, I., Aswad, M.H., Hamzah, S., Jalil, A.R., 2021, *A combined laplace transform and boundary element method for unsteady laplace problems of several classes of anisotropic functionally graded materials*, Engineering Letters 29(2), EL_29_2_23, pp. 534-542.
10. Azis, M.I., Abbaszadeh, M., Dehghan, M., Solekhudin, I., 2021, *A boundary-only integral equation method for parabolic problems of another class of anisotropic functionally graded materials*, Materials Today Communications 26, 101956
11. Ashar, N.Y., Solekhudin, I., 2021, *A numerical study of steady pollutant spread in water from a point source*, Engineering Letters 29(3), pp. 840-848
12. Pramesti, A.A.N., Solekhudin, I., Azis, M.I., 2022, *Implementation of Dual Reciprocity Boundary Element Method for Heat Conduction Problems in Anisotropic Solid*, IAENG International Journal of Applied Mathematics 52(1), IJAM_52_1_17.
13. Solekhudin, I., Sumardi, Purisha, Z., 2022, *A Numerical Study of Heat Conduction Governed by 2D Laplace Equations in Two-Layered Materials*, JP Journal of Heat and Mass Transfer 28(1), pp. 131 – 146.
14. Hilmi, D.M., Solekhudin, I., 2023, *A DRM for Homogeneous Helmholtz Equations in Anisotropic Materials*, JP Journal of Heat and Mass Transfer 31, pp. 33 – 44.



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	<p>15. Solekhudin, I., Azis, M.I., 2023, <i>A Dual Reciprocity Method for a Class of Heat Conduction Problems in Two-Layered Materials</i>, IAENG International Journal of Computer Science 50(1), IJCS_50_1_15.</p> <p>16. Adilia, N.S., Solekhudin, I., 2023, <i>Different Radial Basis Functions for Infiltration from Periodic Flat Channels</i>, JP Journal of Heat and Mass Transfer 33, pp. 21 – 28.</p> <p>17. Azis, M.I., Toaha, S., Hamzah, S., Solekhudin, I., 2023, <i>A Numerical Investigation of 2D Transient Heat Conduction Problems in Anisotropic FGMs with Time-Dependent Conductivity</i>, Journal of Computational Science 73, 102122.</p>
Activities in specialist bodies over the last 5 years	<p><i>Organisation</i> <i>Role</i> <i>Period</i></p> <p><i>Membership without a specific role need not be mentioned</i></p>