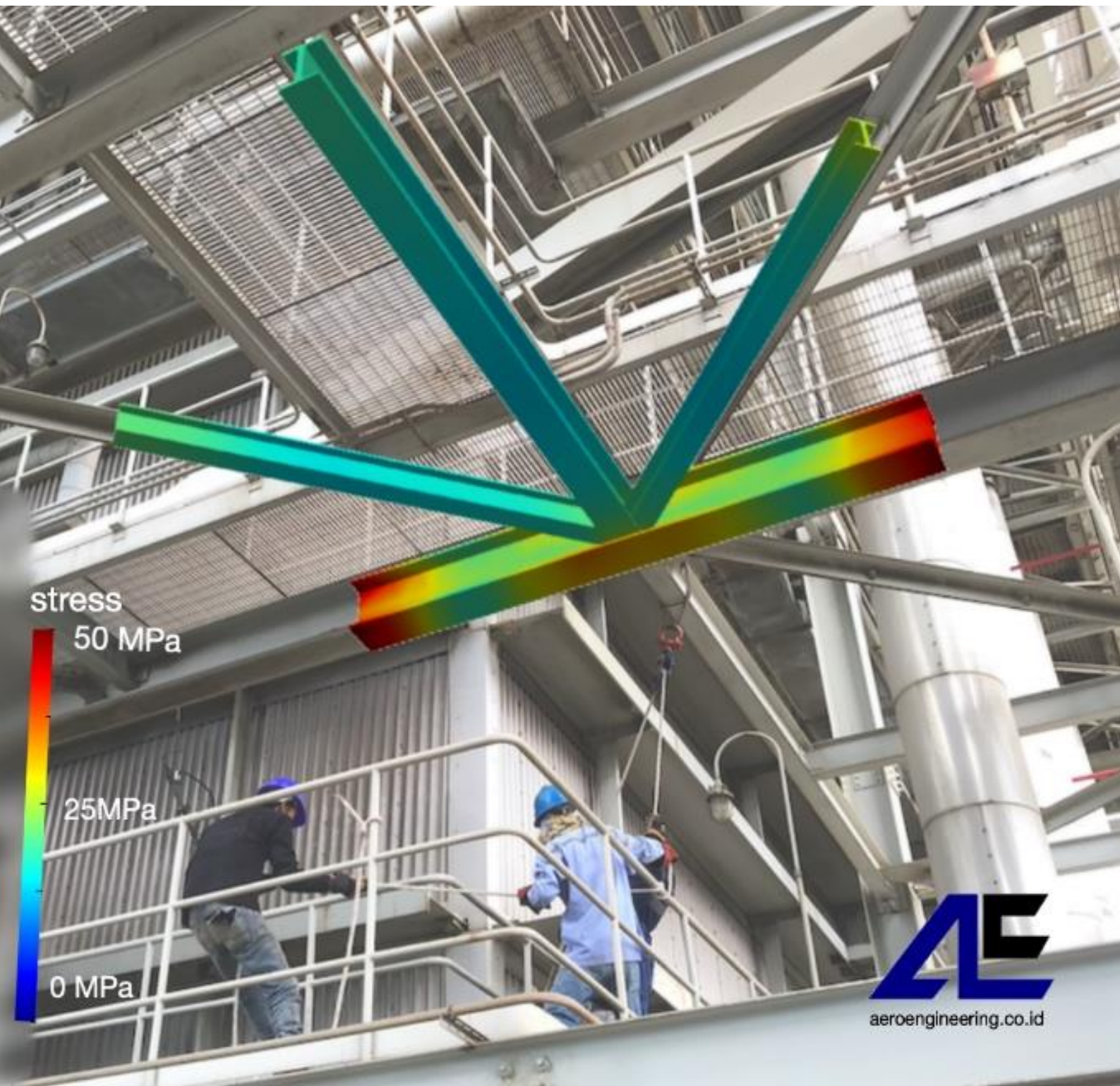


AEROENGINEERING SERVICES



stress
50 MPa

25MPa

0 MPa


aeroengineering.co.id

Company	: CV. Markom
Phone	: +62 821-3868-4162
Email	: caesar@aeroengineering.co.id
Address	: Pundong III Tirtoadi Mlati Sleman Yogyakarta

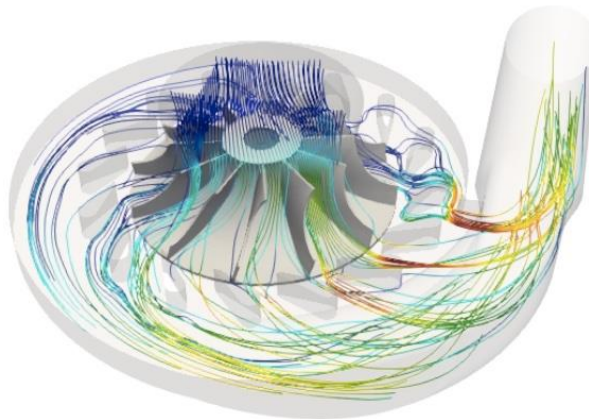

CV. MARKOM

EXECUTIVE SUMMARY

Company : CV. Markom
Division : aeroengineering services
Adress : Pundong III, Tirtoadi, Mlati, Sleman, Yogyakarta
Postal code : 55287
Phone (WA) : +62 821-3868-4162
E-mail : caesar@aeroengineering.co.id
Product : Consulting, project support, training, custom software
NPWP : 83.792.038.8-542.000
NIB/TDP : 9120108150825

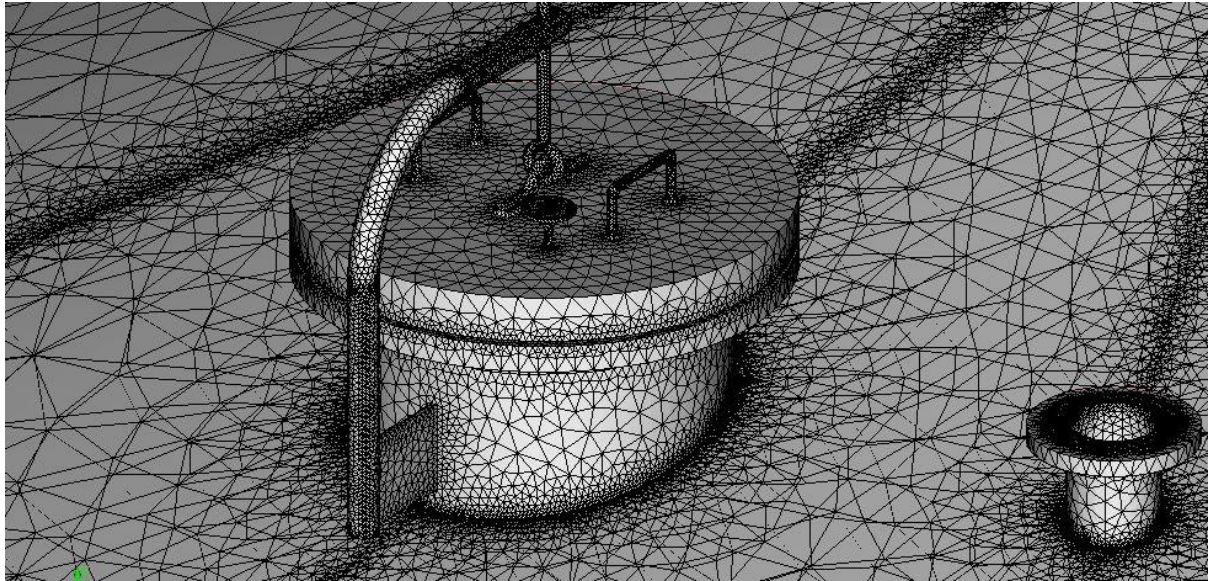
WHAT IS CFD AND FEA?

Computational Fluid Dynamics (CFD) is type of software which has capability to model and solve comprehensive but detailed fluid flow problems with computers, hence reducing cost, reducing time-to-market, faster decision, more flexible, reduce safety issues, and get more comprehensive but detailed result.



On the other hand, Finite Element Analysis (FEA) is similar with CFD software, but specially designed for structural analysis. Both CFD and FEA software has been widely and reliably used for professional industrial engineering applications for decades.





OUR COMPANY

Aeroengineering services is one of a main division of CV. Markom company has been serving engineering services especially with CFD and FEA consulting, project supports, and training since 2013, with our core values: professional, valuable, innovative, and passionate. Our team consisted of experienced engineers which have deep theoretical as well as field problem-oriented portfolios.



Our vision is to make CFD solutions as the first choice in professional engineering applications, which can be done by delivering the best engineer-to-engineer solutions using advanced Computer Aided Engineering (CAE) software and professional services to lower development cost, deeper insight, reduce time to market, and empower engineers. We also always innovate in technology and business competitiveness and contribute to the nation.



OUR SERVICES

ENGINEERING CONSULTING

We deliver consultation for engineering problems, such as finding a failure root cause, verify the design before the project started, optimize product before it mass produced, or even proofing the theoretical ideas with CFD and FEA tools.

PROJECT SUPPORT

Using CFD and FEA software sometimes can become frustrating for beginner, or even professionals if the projects are complicated. We can give you project report solution to help your task done, so you can focus to your problem instead for the complicated software setup.

TRAINING

Engineering world is moving faster and more digital, it is become mandatory for engineer to master CFD and FEA software. With our years of experience in theoretical background, real field applications, and training, we can share our skills and experience in mastering CFD and FEA software.

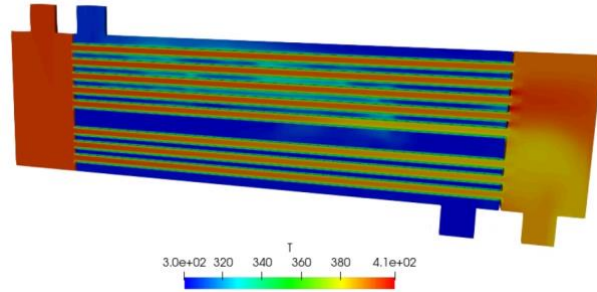
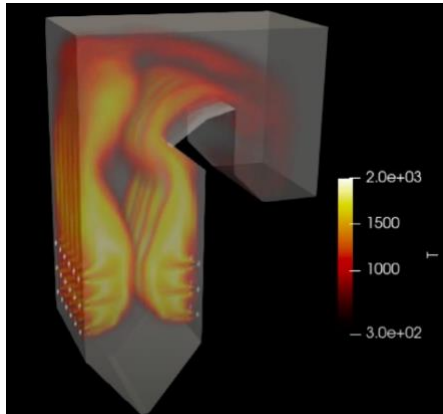
CUSTOM SOFTWARE DEVELOPMENT

Our company also develop custom CFD software designed specifically for your business, known as AE_Solver, which reduced the unused additional features cost, time invested to learn, and professional CFD engineers to hire.

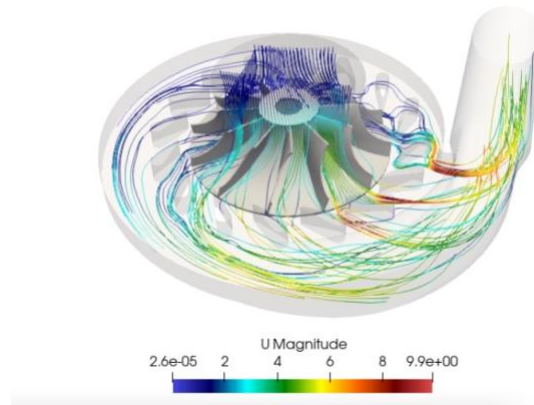
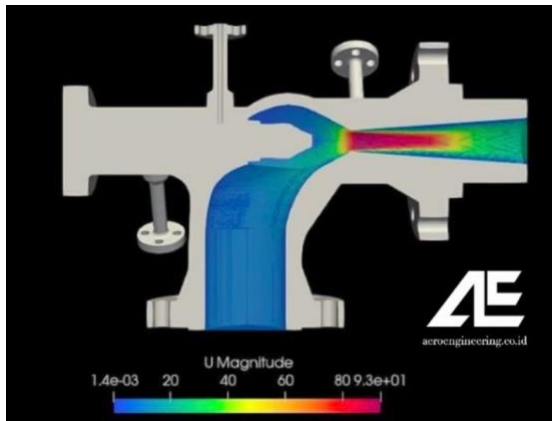


WE SUPPORT WIDE RANGE OF INDUSTRIES

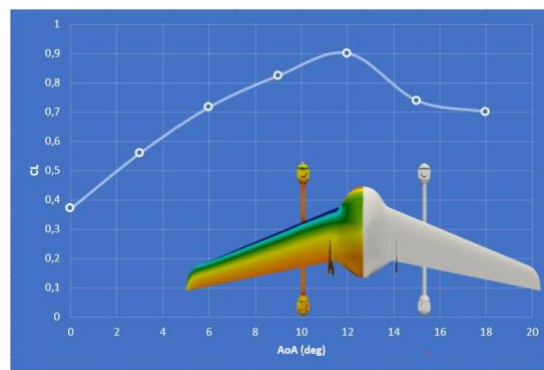
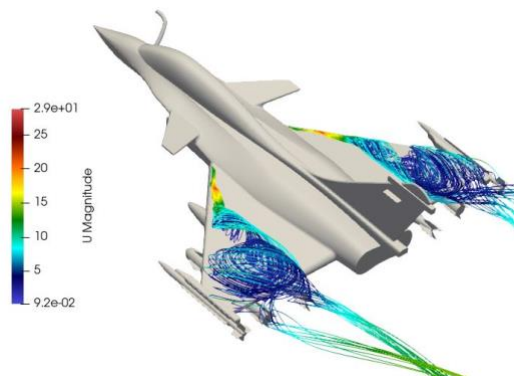
ENERGY



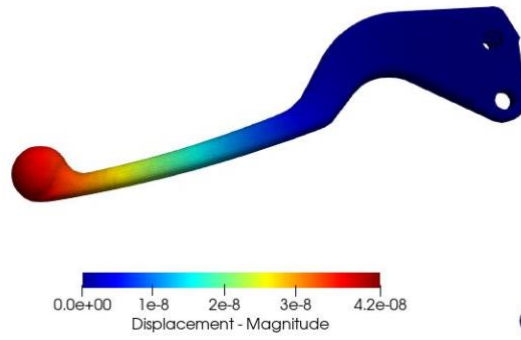
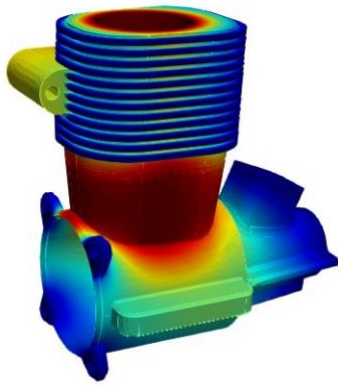
PROCESS



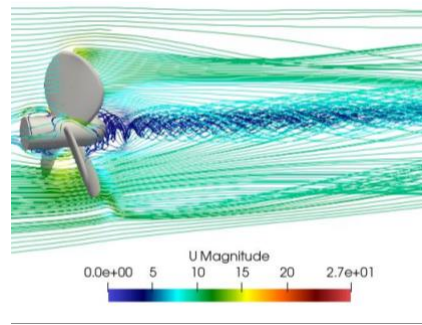
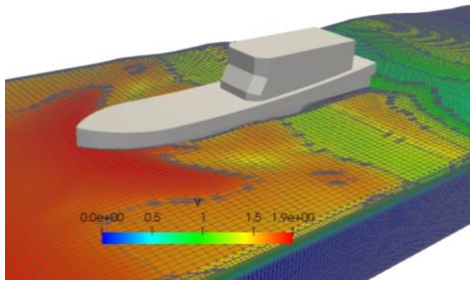
AEROSPACE AND DEFENSE



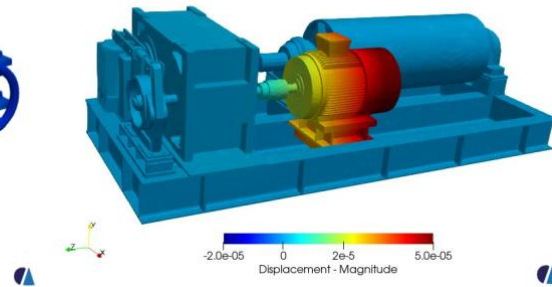
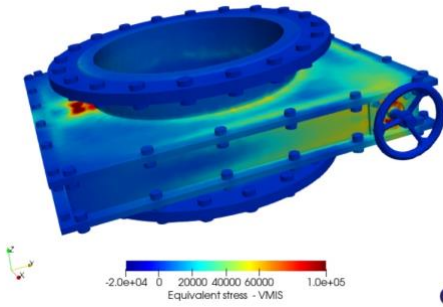
AUTOMOTIVE



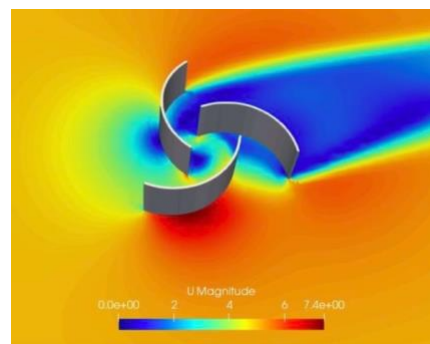
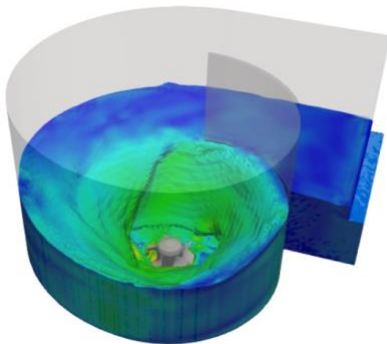
MARITIME



CONSTRUCTION



RENEWABLE ENERGY



OUR CLIENTS



PORTFOLIO

CFD/FEA PROJECTS

- 2021 – Bicycle aerodynamic analysis using CFD (PT. Inera Sena)
- 2021 – Boiler pipe expansion and explosion analysis (Perusahaan Listrik Negara)
- 2021 – Heat exchanger tube erosion analysis using CFD (Pertamina RU II Dumai)
- 2021 – Ducting pipe chiller structural analysis (PT. Son Duct Sejahtera)
- 2021 – Mechanical winch structural design (Artya Swacipta Rekayasa)
- 2021 – Jetpump design and optimization using CFD (PT. Global Patra Sinertama)
- 2021 – Automotive Parts optimization using FEA (ASTRA Otoparts)
- 2021 – Structural analysis for drum pulley in coal production
- 2021 – Structural analysis for coal orifice valve gate
- 2021 – Ship propeller simulation
- 2021 – Explicit dynamics for car impact
- 2020 – Wind breaker aerodynamic analysis: PT. Perusahaan Listrik Negara (PLN)
- 2020 – Modelling fluid-structure interaction (FSI) of a mixing tank for bitumen plant: PT. Timur Agung Abadi (PT. TAA)
- 2020 – CFD simulation of pipe and heat exchanger of a bitumen plant: PT. Timur Agung Abadi
- 2020 – CFD simulation of the inner body angle valve erosion: PT. Mitsubishi Chemical Indonesia
- 2020 – Bus rollover test using FEA explicit solver: New Armada
- 2020 – CFD simulation on the agricultural filter design (Hack a farm competition 2nd winner)
- 2020 – Multiphase CFD analysis of gravitational vortex turbine
- 2020 – Finite Element Analysis of wire rope sling stress
- 2020 – Shipping pump bushing and shaft abrasion and erosion analysis with CFD and FEA.
- 2020 – Analysis of oxygen concentration in the aerator pound
- 2019 – Design and optimization of the pressure vessel for chemical reactor (PT. Tunas Energi)
- 2019 – Numerical study of tangential-firing boiler performance (PT. Indonesia Power)
- 2019 – Numerical study of dong fang turbine coil overheating problem (PT. Indonesia Power)
- 2018 – Numerical Modelling of Gas Turbine's Combustion Chamber (PT. PJB PLN)
- 2018 – Numerical Study of Mini Turbojet Design and Optimization of Fighter UAV (UGM)
- 2018 – Finite Element Analysis Study of ASTM D638
- 2018 – 2D Analysis of VAWT Wind Turbine with Pitch Angle Variation
- 2018 – Numerical Study of 3D VAWT Wind Turbine with Fin Variation
- 2018 – Numerical Study of Turbocharger
- 2018 – Finite Element Analysis of Hook for Bicycle Industry

2018 – Finite Element Analysis of Welding’s Residual Stress at Pressure Vessel’s Nozzle
2018 – Performance Analysis of Gorlov Turbine with Computational Fluid Dynamics
2018 – Performance Analysis of Undershoot Water Turbine Generator with CFD
2018 – Design and Analysis of Expander turbine with Computational Fluid Dynamics
2018 – Finite Element Analysis of Automobile Rim
2018 – Thermal Study of Asphalt Heating Chamber Using Computational Fluid Dynamics
2018 – Comparison Study of Bio-CMC 5 and Bio-Pol 5 heating characteristics using Computational Fluid Dynamics
2018 – Performance Analysis of Grob G-120 TP’s Wing with CFD (Indonesian Airforce Academy)
2018 – Performance Analysis of Supersonic Flow Regime Rocket Nose Shape (Indonesian Airforce Academy)
2018 – Pulley and Shaft Stress Analysis using Finite Element Method
2018 – Performance Analysis of Aerobatic Aircraft Wing Using Computational Fluid Dynamics (Indonesian Airforce Academy)
2018 – Automotive Body Shape Analysis Using Ahmed Body Computational Fluid Dynamics
2018 – Centrifugal compressor Impeller Analysis using Computational Fluid Dynamics
2018 – Computational Fluid Dynamics Analysis of Liquid Petroleum Gas Leaked Distribution
2018 – Computational Fluid Dynamics Study of Free Surface Interaction Ship’s Hull
2018 – Numerical Study of Jet-Cellar performance at an oil rig
2018 – Numerical study of Droplet Distribution Inside Intake Manifold (National Institute of Science and Technology)
2018 – Ground-Coupled Heat Exchanger Computational Fluid Dynamic Study
2018 – Thermal Analysis of Flue Gas Desulfurization with Computational Fluid Dynamics
2018 – Computational Fluid Dynamic Analysis of Ejector for Chemical Process Industry (ITB)
2018 – Boiler Chamber Thermal Optimisation Study with Computational Fluid Dynamics
2017 – Numerical Study of Stuffing Box Wear Analysis for Oil and Gas Platform (PT. Pertamina)
2017 – Computational Fluid Dynamic Study of SPA 12-C’s Winglet Aerodynamics (Indonesian Airforce Academy)
2017 – Numerical Study of Mini Wind Turbine For Rural Area in Indonesia (UGM)
2017 – Subsonic Missile Design and Optimisation with Numerical Analysis (UGM)
2017 – Adaptive Pitch and Transmission of Small Wind Turbine (UGM)
2017 – Consecutive Trucks Ahmed Body CFD Simulation with Structured Mesh (UGM)
2017 – Numerical Analysis of Mechanical Draft Water Cooling Tower (Physics Energy Department Surya Institute)
2017 – Design and Analysis of Cast Aluminium Bicycle (UGM)
2017 – Design and Drafting of Gas Cargo Truch Wheel Wedge (PT. Pertamina)
2017 – Granulator Gear Failure Analysis with Finite Element Method (ITS)
2017 – Shell and Tube Split Flow Heat Exchanger Optimatation by Material Variation
2017 – Numerical Study of Flow Trough the Backward Facing Step with Hot Air Exhaust (ITS)
2017 – Design and Analysis of Inclined Conveyor for Automotive Industry
2017 – Analysis of Aerodynamic and Vibration Characteristics of Suramadu Bridge with Computational Fluid Dynamics and Finite Element Method (ITS)
2017 – Optimatation of Muffler Design for Automobiles (Institut Teknologi Indonesia)
2017 – Numerical Study of Induced Draft Counter Flow Cooling Tower at Industrial Power Plants (PT. Krakatau Posco)
2017 – Design and Optimatation of Wulung UAV’s Nacelle with Computational Fluid Dynamics (PT. Dirgantara Indonesia)
2017 – Design and Optimatation of Egg Hatchery Heating Chamber with Computational Fluid Dynamics
2017 – Design and Optimatation Study of Sea Chest for Chargo Ship (ITS)

2017 – Numerical Study of Boeing 737 Airfoil at Transonic Flow Regime (Indonesian Airforce Academy)
2017 – Thermal Analysis of Solar Collector Flat Plate with Computational Fluid Dynamics (UNNES)
2017 – Design and Simulation of Shell and Tube Heat Exchanger (Universitas Pancasila)
2017 – Optimisation Study of Ladder and Platform for Construction Industry (CV. Aghatara)
2017 – Numerical Study of Shipping Pump with Computational Fluid Dynamics (Master UGM)
2017 – Water Turbine Cross Flow Performance Analysis with Computational Fluid Dynamics (Universitas Hasanudin)
2017 – Water Turbine Generator Performance Analysis Numerical Study (ITS)
2016 – Study of Factory's Room Humidity to Achieve Comfort Level (ITS)
2016 – Concrete Mixer Vibration Analysis With Finite Element Analysis, Modal Analysis (ITS)
2016 – Design of Portable Mechanical Pacemaker (UGM)
2016 – Design and Analysis of Portable Laptop Desk with Finite Element Analysis (UGM)
2016 – Design of Automatic Carpet Washer Machine (PT. Karya Sari Murni)
2016 – Numerical Study of Asphalt Factory Air Circulation With Computational Fluid Dynamics (ITS)
2015 – Design of Anti-Vibration Gloves with Auxetic Materials (UGM)
2015 – SMART Winglet Design and Optimisation with Computational Fluid Dynamic (SMAN 1 Yogyakarta)
2015 – Numerical Study of Bamboo's Capability to Withstand Merapi Mountain Eruption (SMAN 1 Yogyakarta)
2014 – Design of Automatic Can's Cap Puncher Conveyor (PT. Karya Sari Murni)

TRAINING/SPEAKER

2021 – Training introduction to CFD, FEA, and fluid structure interaction (Bali Power Generation Unit)
2020 – Training projectile with dynamic mesh motion: Universitas Pertahanan (UNHAN)
2020 – Seminar bisnis komposit fiber: Institut Teknologi Kalimantan
2019 – Training phase change material heat storage: Universitas Muhammadiyah Yogyakarta (UMY)
2019 – Training numerical modeling and simulation of FEA and CFD coupling PT. Indonesia Power
2019 – Training numerical modeling and simulation of heat exchanger PT. Indonesia Power
2018 – Training of Pressure vessel design with fatigue load simulation at PT. Wijaya Karya (WIKA)
2018 – Training Boiling steam generator of Nuclear Power Generator at Badan Tenaga Nuklir Nasional (BATAN)
2018 – Training Aerodynamics analysis with Computational Fluid Dynamics (CFD) simulation at PT. Infoglobal
2018 – Training Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) of combustion and reacting flow, Heat Transfer at Lembaga Pendidikan Perkebunan Yogyakarta (LPP Yogyakarta)
2018 – Training Numerical Modelling of Gas Turbine Combustion Chamber at PT. Pembangkit Jawa Bali Perusahaan Listrik Nasional (PT. PJB PLN)
2017 – Training Structured Mesh and Aircraft delta wing simulation at Universitas Gadjah Mada (UGM)
2016 – Open Discussion, Design of Aircraft airfoil and wing at Mechanical Engineering Universitas Gadjah Mada (UGM)
2016 – Application and Mechanism of Drone at Engineering Faculty Universitas Gadjah Mada (UGM)

PUBLICATIONS

2020 – Modul simulasi ANSYS struktur untuk pemula. Penerbit CV. Markom

2020 – Modul simulasi ANSYS fluida untuk pemula. Penerbit CV. Markom

2018 – The Flow Visualization CFD Studies of the Fuselage and Rolled-up Vortex Effects of the Chengdu J-10-Like Fighter Canard. Canadian Center of science and Education. Modern Applied Science; Vol. 12, No. 2; 2018. ISSN 1913-1844 E-ISSN 1913-1852.

2018 – The Rolled-Up and Tip Vortices Studies in the CFD Model of the 3-D Swept-Backward Wind Turbine Blades – Canadian Center of Science and Education, Modern Applied Science; Vol. 11, No. 12; 2017, ISSN 1913-1844 E-ISSN 1913-1852

2018 – The Numerical Study of Flow Around Chengdu J-10 like and Sukhoi SU-30 like Fighter Aircraft at Subsonic Regime. Aeronautical Journal

2017 – CFD Simulation of The End Plates Effect on the Elang Caraka Unmanned Aerial Vehicle UAV. International Conference of Advanced Mechatronics, Intelligent Manufacture, and Industrial Automation (ICAMIMIA). IEEE Xplore. ISBN: 978-1-5386-2729-7.

2016 – Adaptive Pitch and Transmission of Small Wind Turbine to Meet Energy Demand for Industrial Revival. International Conference of Integrated Community.

2016 – Mechanically Driven Adaptive Pitch and Transmission for Small Wind Turbine to Widen the Operational Condition. International Conference on ASEAN Development.

2015 – Design of Anti-vibration Gloves Using Auxetic Polyurethane Foam to Prevent HAVS. Occupational Health and Safety Community.

2014 – Auxetic Polyurethane Foam as Preventive Aid of Hand Arm Vibration Syndrome's (HAVS) Manifestation at Engineering Students. Health and Safety Festival

2014 – Unmanned Submarine for Hydrography Mapping. Student Creativity Event.

PUBLICATIONS

2021 – Teori dan best practices Computational Fluid Dynamics (CFD). Penerbit AE_Publisher

2020 – Modul simulasi ANSYS struktur untuk pemula. Penerbit AE_Publisher

2020 – Modul simulasi ANSYS fluida untuk pemula. Penerbit AE_Publisher

2018 – The Flow Visualization CFD Studies of the Fuselage and Rolled-up Vortex Effects of the Chengdu J-10-Like Fighter Canard. Canadian Center of science and Education. Modern Applied Science; Vol. 12, No. 2; 2018. ISSN 1913-1844 E-ISSN 1913-1852.

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2014 – Unmanned Submarine for Hydrography Mapping. Student Creativity Event.

AWARDS

2020 – 2nd Winner of Hack a Farm (Idmira)

2019 – special prize from Korea Invention Promotion Association (KIPA)

2019 – Silver medal International Invention, Innovation, and Technology (Malaysia)

2016 – Best Design Category of Eco Solar Boat, Marine ICON

2016 – Selected Paper, International Conference of Integrated Community

2016 – Selected Paper, International Conference on ASEAN Development

2016 – General Champion of Kontes Robot Terbang Indonesia (KRTI)

2016 – Best system category of Kontes Robot Terbang Indonesia (KRTI)

2015 – 3rd Winner of Occupational Health and Safety Community (OHSC) UI

2015 – General Champion of Kontes Robot Terbang Indonesia (KRTI)

2015 – 1st Winner of Mapping Category Kontes Robot Terbang Indonesia (KRTI)

2015 – Best Idea Category, Kontes Robot Terbang Indonesia (KRTI)

2015 – Best Design Category, Kontes Robot Terbang Indonesia (KRTI)