(SCOPUS) **(SINTA)**

Name	Dr. Firmanul Catur Wibowo, M.Ed.
Position	Lecturer in Physics Education
Educational Background	1. Bachelor's degree Physics Education, Semarang State University 2. Master's degree Physics Education, Indonesia University of Education 3. Doctoral degree Science Education, Indonesia University of Education
Academic Career (Employment)	1. Lecturer in Road Transportation Safety Polytechnic (PKTJ) 2011-2014 2. Lecturer and in Universitas Sultan Ageng Tirtayasa 2014-2019 3. Regional coordinator of SINTA Jabar Banten district Indonesia, Ministry of Education, Culture, Research and Technology 2018-2019 4. Lecturer in Master Physics Education, Jakarta State University
Research and Development project over the last 5 years	1. Development of Augmented Reality Integration (ARI) based Model Physics Independent Learning (MPIL) for Facilitating 21st-Century Skills (21-CS) 2. Development of Augmented Reality Integration Physics (ARIP) to Improve Students' Critical Thinking Skills for Reconstructing Physics Conceptions 3. Pengembangan Interactive Digital Modul Physics (IDMP) Berbasis STEM (Science, Technology, Engineering, Mathematics) Untuk Meningkatkan Kompetensi Abad 21 Employability Skills 4. Development Flipped Classroom Based Inquiry Learning (FCBIL) For 21-Century Skills (21-CS): Problem Solving Skills and Creativity Skills in Prototype Curriculum Schools 5. Development Of an Interactive Book Augmented Reality (IBAR) For Lesson On Student Stem For Facilitating 21st-Century Skills (21-CS)

	6. Development of a Stem-Based Physics Learning Website (Wpf) as a Source of Home Learning (Bdr) for High School Students During the Pandemic 7. Development of E-Character Mental Revolution (E-Krm) Based on Mobile Digital Education (Mde) to Strengthen Santri and Student Competence in Facing the Disruptive EraDevelopment Of Game Open Online Physics Instructional (Goopi) For Improving 21st-Century Careers: Creativity Skill 8. Designing Moocs With Virtual Microscopic Simulation (Vms) For Student's Levels Of Understanding And Model Of Understanding 9. Development of a Virtual Physics Laboratory (VPL) as a Facility for Inquiry and Problem Solving Laboratory Activities for Microscopic Materials for Prospective Physics Teacher Students 10. Development of E-Character Mental Revolution (E-Krm) Based on Mobile Digital Education (Mde) to Strengthen Santri and Student Competence in Facing the Disruptive Era 11. Development of an Assessment Virtual Test (Asvite) Based on Interactive Lecture Demonstration (ILD) to Improve 21st Century Competency Employability Skills 12. Development of a Virtual Physics Laboratory (VPL) as a Facility for Inquiry and Problem Solving Laboratory Activities for Microscopic Materials for Prospective Physics Teacher Students 13. Design For Assessment The Millennial Character Education With System Recording Students Character (Srsc) For Developing 21 Century Skills
Industry collaboration/ Community Services over the last 5 year	1. International Collaborative Community Services (ICCS): Dissemination of Virtual Microscopic Simulation (VMS) to Sparking Innovation in STEM Education for Facilitating 21st-Century Skills (21-CS) in Universitas Negeri Jakarta and Universiti Sains Malaysia 2. International Collaborative Community Services (Iccs): Dissemination of GOOPI (Game Open Online Physics Instructional) To Sparking Innovation In Stem Education For Facilitating 21st-Century Skills (21-Cs) In Universitas Negeri Jakarta And Universiti Sains 3. PPM to improve the quality of PKBM learning in kel. Tanjung Barat kec. Jagakarsa, administrative city of South Jakarta through the implementation of digital classes based on Microsoft 365 education 4. PPM Speed Orbital (SO) Making Training for Physics Teachers at Dwiwarna High School, Bogor Regency, West Java Province 5. PPM Efforts to Improve the Quality of Az-Ziyadah Islamic Boarding School Education in Klender Village, Duren Sawit District, East Jakarta City through Learning Using Innovative Smart Orbital (ISO) Media 6. PPM Through Training on the Development of Gangsing Smart Orbital (Gso) Media to Improve Creative Thinking Skills for

	Physics Teachers at Dwiwarna High School, Bogor Regency, West Java Province
Patents and Intellectual Property Right (IPR)	1. Story Board Optics Virtual Laboratory (OVL) Based On Physics Independent Learning (PIL) 2. Augmented Reality Integration (ARI) Based Model Physics Independent Learning (MPIL) 3. Program Komputer Interactive Digital Modul Physics (IDMP) Berbasis STEM 4. Program Komputer Augmented Reality Integration Physics (ARIP) 5. Buku Media Dan Sumber Belajar 6. Buku Strategi Mengajar DI Tingkat Pendidikan Menengah 7. eSWoP On Heat 8. Alat Praktikum Pembiasan Cahaya Menggunakan Sensor Photodioda 9. Game Open Online Physics Instructional (GOOPI) 10. Program Komputer SRSC 11. Program Komputer ASVITE (Assessment Virtual Test) 12. Program Komputer Perpindahankalor.com
Important publications over the last 5 years	1. 2022 Digital Learning Research in the Last 30 Years: Important Role of Interactive Learning in Physics 2. 2022 Analyze The Mechanism Of Tsunami Based On The Scopus Database 3. 2022 Implementation Of Online Problem-Based Learning Assisted By Digital Book With 3d Animations To Improve Student's Physics Problem-Solving Skills In Magnetic Field Subject 4. 2021 PhET-assisted electronic student worksheets of physics (eSWoP) on heat for inquiry learning during covid 5. 2021 The technology of interactive book augmented reality (IBAR) for facilitating student 21-century skills 6. 2021 Critical thinking skills on physics learning during COVID- 19 Pandemic: A bibliometric analysis using VOS viewer 7. 2021 E-learning in sains learning: A-review of literature 8. 2021 Project Based Learning (PjBL) learning model in science learning: Literature review 9. 2021 Review of trends project based learning (PjBL) integrated STEM in physics learning 10. 2021 Website of physics instructional (WoPI): Learning physics from home during COVID-19 11. 2021 Trends of flipped classroom studies for physics learning: A systematic review 12. 2021 A review of research on the use of augmented reality in physics learning 13. 2021 Augmented reality geometrical optics (AR-GiOs) for physics learning in high schools 14. 2021 Development of Android Physics Applications (APA) as learning media on dynamic fluid concepts

	15. 2021 Four Tier Test (FTT) development in the form of virtualization static fluid test (VSFT) using rasch model analysis to support learning during the Covid-19 pandemic 16. 2021 Unveil problem based learning on physics learning: A literature review 17. 2021 Interactive Book Augmented Reality (IBAR) for lesson physics on STEM 18. 2021 Flipped learning models and students' scientific literacy on physics achievement test 19. 2021 Trends of augmented reality in science learning: A review of the literature 20. 2021 Design of Massive Online Simulation (MOS) on concept archimedes' principle 21. 2021 Design of massive online simulation in the learning physics of thermodynamics process 22. 2021 Design of Massive Online Simulation (MOS) on kinetic theory of gases 23. 2021 Digital storytelling of Physics (DiS-Phy): Learning physics from home through stories 24. 2021 Dissemination of GOOPI (Game Open Online Physics Instructional) to sparking innovation in education 25. 2021 Virtual Microscopic Simulation (VMS) design on light waves: Interference and diffraction 26. 2021 Massive Open Online Simulation (MOOS) of physics concepts microscopic for improving creative thinking 27. 2021 Product feasibility study: Development of e-learning media on schoology-based in problem based learning model on simple harmonious motion materials 28. 2021 Development of Augmented Physics Animation (APA) with the Integration of Crosscutting Concepts about the Covid-19 as a Supplement to the Introductory Physics Course 29. 2021 (ISO) Media for improving learning quality using analysis RapidMiner 30. 2021 Analysis on interest motivation instrument (iim) for measure of interest and motivation of study doctoral physics education using RapidMiner 31. 2021 Development of a Basic Physics Practicum Guide that is Integrated with Qur'anic Verses for Prospective Natural Science Teachers 32. 2021 Effectiveness of Virtual Physics Laboratory (VPL) with Dry Cell Microscopic Simulation (DCMS) to Promote of Inquiry Activity about the Battery 33. 2021 Implementation of discovery learning in a digital class and its effect on student learning outcomes and learning independence level [version 1; peer review: 1 approved with reservations]

	34. 2020 Development of the innovative smart orbital (ISO) medium to improve the cognitive skills on the heat transfer concept 35. 2020 Analyzing the students' conceptual change on kinetic theory of gases as a learning effect though computer simulations-assisted conceptual change model 36. 2019 Mobile Digital Education (MDE) for increasing competence of students based on E-Characters Mental Revolution (E-CMR) 37. 2019 Designing MOOCS with Virtual Microscopic Simulation (VMS) for increasing of student's levels of understanding 38. 2019 Effectiveness of learning support of asset (assessment simulation test) for reconstruction physics conception 39. 2019 Unveiling students' misconceptions through computer simulation-based PDEODE learning strategy on dynamic electricity 40. 2019 Unveil of virtual physics laboratory (VPL) with battery microscopic simulation (BMS) to promote of problem solving activity 41. 2019 Improvement of students' critical thinking ability through problem-based learning (PBL) model class XI MIPA 3 on temperature and heat material 42. 2019 Investigating science interest and cognitive domain with science contextual teaching and learning (SCTL) methods 43. 2019 Effect of welfare and teaching motivation on professional competence of elementary teachers using participatory action research (Par) methods 44. 2019 Identifying pre-service physics teacher mental model on electric conceptions 45. 2019 Optimizing Students' Conceptual Understanding on Electricity and Magnetism through Cognitive Conflict-Based Multimode Teaching (CC-BMT) 46. 2019 Virtual media simulation technology on mathematical representation of sound waves 47. 2019 Virtual simulation instructional training for students' drop out of mathematical science digital entrepreneurs 48. 2019 Educational technology of virtual physics laboratory (VPL) for the microscopic concept 49. 2019 Advanced virtual physics laboratory (VPL) of dynamic electricity 50. 2018 Level conceptual change pre-service elementary teachers on electric current conceptions through visual multimedia supported conceptual change 51. 2018 Improving students' conceptions on fluid dynamics through peer teaching model with PDEODE (PTM-PDEODE)

Activities in Professional organizational over the last 5 years	1. Member of Physical Society of Indonesia (PSI) number: 07201600643 (2016-now) 2. American Association of Physics Teachers (AAPT) ID 129181 (2019-now)