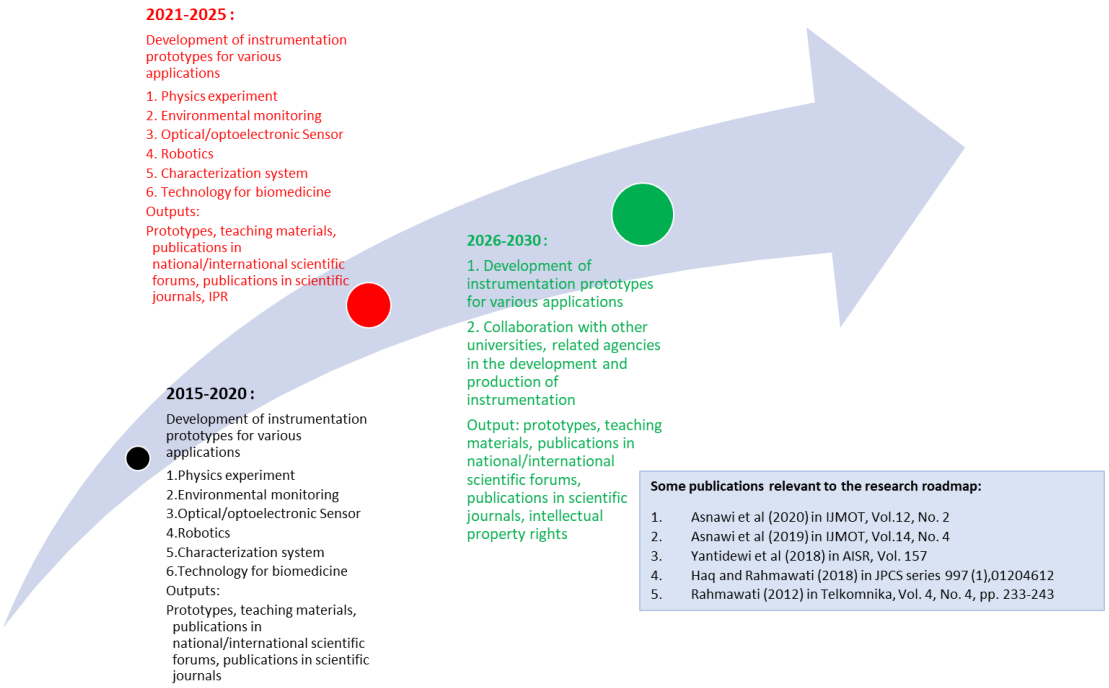
RESEARCH AREA OF INSTRUMENTATION

This specialization aims to produce graduates who are competent in developing knowledge and skills related to instrumentation research; able to work independently, professionally, and responsibly in research and development activities of reliable instrumentation for various applications. Instrumentation physics at the Department of Physics, FMIPA Unesa is an applied study of physics in: (1) physical measurement systems and characterizations, either directly or indirectly; (2) sensor systems (gas, optics/optoelectronics); (3) signal conditioning and processing for further implementation, (4) control systems and robotics; (5) physical measurement system for high school physics laboratory. The five studies were implemented in several studies that have been carried out by the Instrumentation Physics RBK Team as stated in the research project section.

Personnel		
Team Research Area Instrumentation		
	Dr. Asnawi, M.Si. (coordinator)	**Research Area :** Measurement Instrumentation, Optical Materials and Optoelectronics
	Dzulkiflih, S.Si., M.T. (member)	**Research Area :** Measuring System, Processing Digital Signal, Stochastic
	Endah Rahmawati, S.T.,M.Si. (member)	**Research Area :** Measurement System, System Control, Instrumentation based Microcontroller, Robotics
	Meta Yantidewi, M.Si. (member)	**Research Area :** Sensor system,Measuring System, Environmental Monitoring System

	Dr. Rohim Aminullah Firdaus, S.Pd, M.Si (member)	**Research Area :** FDTD Computing, Antenna Propagation, Optoelectronics
	Dr. Muhimmatul Khoiro, S.Si. (member)	**Research Area :** Optoelectronics, Optical Materials, Applied of EM, and Image Processing

Roadmap of Instrumentation Research



Research Project :

1. Eco-Robot Cleaning Waste from Water Areas (Unesa PNBP Applied Research Grant, 2019)
2. Fabrication of Glucose Sensors Based on Fiber Bragg Grating With SnO2 Nano Material Coating for Early Detection of Diabetes Mellitus Non-Invasively (Unesa PNBP Applied Research Grant, 2019)
3. Development of Carbon Fiber-Glass Fiber Reinforced Polyester Composite for Runner's Foot Prosthesis Application (Unesa PNBP Applied Research Grant, 2019)
4. Development of Robot Arm Module for Control System Learning Media (BOPTN Unesa Research Grant, 2019)
5. Development of Sensor System Teaching Materials (BOPTN Unesa Research Grant, 2017)
6. Development of Advanced Electronics Course Teaching Materials with a Problem Based Learning Approach (BOPTN Unesa Research Grant, 2019)
7. Changes in the Length of the Optical Waveguide Body of the X-Cross Model with Tin Oxide (SnO2) Nano Film as an Optimization of the Power Divider (Dissertation Grant, 2018)
8. Development of Integrated Teaching Materials/Experimental Guides in Optical Waves Courses to Improve Science Process Skills in the Department of Mathematics and Natural Sciences Unesa (Grant Superior PT, 2015)
9. Development of Integrated Teaching Materials/Experimental Guides in Optical Waves Courses to Improve Science Process Skills in the Department of Mathematics and Natural Sciences Unesa (Grant Superior PT, 2014)

PUBLICATION IN CONFERENCE

No	Faculty members	Title	Authors	Name of Journal	Quartile	URL/ DOI
2021						
1	Mita Anggaryani, Ph.D Prof. Tjipto Prastowo, Ph.D Prof. Madlazim, M.Si Drs. Supardiyono, M.Si **Dr. Asnawi, M.Si**	A simple note on the growth rate of Covid-19 in Indonesia based on a curve trend generated by a spreadsheet	**M Anggaryani, T Prastowo, Madlazim, Supardiyono** and **Asnawi**	Journal of Physics: Conference Series 1747:012024	Q3	Link
2	Abdul Kholiq, M.T Drs. Imam Sucahyo, M.Si **Dzulkiflih, S.Si., M.T** Meta Yantidewi, M.Si	VLH Development as Implementation Support for SFH (Study from Home) Policy During Covid-19 Pandemic: Analysis of Validity and Effectivity	**A Kholiq, I Sucahyo, Dzulkiflih** and **M Yantidewi**	Journal of Physics: Conference Series 1805:012041	Q3	Link
3	**Dr. Asnawi, M.Si**	Flexible and Low-Cost Fabrication of Optical Waveguides Based on Sno2 for Passive Optical Devices	**Asnawi**, N A Siddiq, M S Muntini and Y H Pramono	Journal of Physics: Conference Series 1805:012043	Q3	Link
4	**Dr. Asnawi, M.Si**	Effect of Alkali Treatment of Piper Betle Fiber on Tensile Properties as Biocomposite Based Polylactic Acid: Solve Cast-film Method	H Mukaffa, M Asrofi, Sujito, **Asnawi**, Y Hermawan, Sumarji, R. D. H. Qoryah, S. M. Sapuan, R. A. Ilyas, A. Atiqah	Material Today: proceedings xxx (xxxx) xxx	Q3	Link
5	Mita Anggaryani, Ph.D Prof. Tjipto Prastowo, Ph.D Prof. Madlazim, M.Si Drs. Supardiyono, M.Si **Dr. Asnawi, M.Si**	A simple note on the growth rate of Covid-19 in Indonesia based on a curve trend generated by a spreadsheet	**M Anggaryani, T Prastowo, Madlazim, Supardiyono** and **Asnawi**	Journal of Physics: Conference Series 1747:012024	Q3	Link
2020						
6	**Endah Rahmawati, M.Si** **Meta Yantidewi, M.Si** Imam Sucahyo, MSi **Dzulkiflih, MT**	Control Position of Mobile Robot Based on Odometry Method and PID Controller	A N Albab, **E Rahmawati, M Yantidewi, I Sucahyo, Dzulkiflih** and R R Firmansyah	Journal of Physics: Conference Series Vol 1491		Link

7	Diah H Kusumawati, M.Si Nugrahani P Putri, M.Si **Dr Asnawi, M.Si** Prof. Dr. Munasir, M.Si	Porosity Characteristics and Electrochemical Performance of rGO Coconut Shell as Supercapacitor Electrodes	**D H Kusumawati, N P Putri, Asnawi**, T S Dewi and **Munasir**	Journal of Physics: Conference Series Vol 1491		Link
2019						
8	**Asnawi, M.Si** **Endah Rahmawati, M.Si**	Simple Glucose Measurement System Based on Uncladded Fiber Bragg Grating Etched with Nitric Acid	**Asnawi**, **E Rahmawati**, N Qomariyah, N A Siddiq, S K Goshals and Y H Pramono	Journal of Physics Conference Series volume 1417 article number 012004	Q3	Link
9	**Endah Rahmawati, M.Si** Imam Sucahyo, M.Si **Asnawi, M.Si**	A Water Surface Cleaning Robot	**E Rahmawati, I Sucahyo, A Asnawi**, M Faris, M A Taqwim and D Mahendra	Journal of Physics Conference Series volume 1417 article number 012006	Q3	Link
10	Setyo Admoko, M.Pd **Meta Yantidewi, M.Si**	The Implementation of Guided Discovery Learning Using Virtual Lab Simulation To Reduce Students' Misconception on Mechanical Wave	**S Admoko**, **M Yantidewi** and R Oktafia	Journal of Physics: Conference Series volume 1417 article number 012089	Q3	Link
11	Utama Alan Deta, M.Pd., M.Si., Nurita Apridiana Lestari, M.Pd., dan **Meta Yantidewi, M.Si.**	Analysis of High School Physics National Examination questions based on Bloom Taxonomy and National Examination Question Standard in 2017/2018	A Nurlailiyah, **U A Deta**, T N Ain, M S Haq, **N A Lestari** and **M Yantidewi**	Journal of Physics Conference Series volume 1171 article number 012041	Q3	Link
2018						
12	**Dzulkiflih, S.Si., M.T.**	Low Voltage Series Arc Fault Detecting With Discrete Wavelet Transform	Ilman, A.F., **Dzulkiflih**	Proceedings of the 2018 International Conference on Applied Engineering, ICAE 2018, 2018, 8579416	-	Link

13	**Dzulkiflih, S.Si., M.T.** Drs. Imam Sucahyo, M.Si. **Endah Rahmawati, S.T., M.Si.**	A Low Cost Mobile Robot Based on Proportional Integral Derivative ({PID}) Control System and Odometer for Education	R Haq, H Prayitno, **Dzulkiflih**, **I Sucahyo** and **E Rahmawati**	IOP Conf. Series: Journal of Physics: Conf. Series 997 (2018) 012046	Q3	Link
14	**Meta Yantidewi, M.Si.** Utama Alan Deta, M.Si. Nurita A Lestari, M.Pd.	The Design of a PC-Based Real-Time System for Monitoring Methane and Oxygen Concentration in Biogas Production	**M Yantidewi**, MS Muntini, **UA Deta**, **NA Lestari**	Journal of Physics: Conference Series 997 (1) 012018.	Q3	Link
15	Utama Alan Deta, M.Si. Nurita A Lestari, M.Pd. **Meta Yantidewi, M.Si.**	The D-Dimensional Non-Relativistic Particle in the Scarf Trigonometry plus Non-Central Rosen-Morse Potentials	UA Deta, NA Lestari, M Yantidewi, Suparmi, Cari	Journal of Physics: Conference Series 997 (1) 012014.	Q3	Link
16	Nurita A Lestari, M.Pd. Nadi Suprapto, Ph.D. Utama Alan Deta, M.Pd. **Meta Yantidewi, M.Si.**	Implementation of Multimodel Active Learning to Improve Basic Teaching Skills of Pre-Service Physics Teachers	**N A Lestari**, **N Suprapto**, **U A Deta**, and **M Yantidewi**	Journal of Physics: Conf. Series 1108	Q3	Link