

Dr. Frida Ulfah Ermawati, M. Sc.

Position	**Lecturer on: Diffraction Data Analysis, Quantum Physics, Crystallography, Ceramic Dielectric Materials, Solid State Physics, Thermodynamics, Electric and Magnetism, Elementary Physics I & II Courses**		
	Assistant Professor in Materials Science		
	Degree	**University**	**Year**
Academic Career	**Bachelor of Physics Education**	IKIP Negeri Surabaya - Indonesia	1985-1990
	Master of Science (Materials Science)	Monash University, Melbourne, Victoria, Australia	1997 - 2000
	Workshop on Diffraction Data Analysis (**Non Degree Training**)	LPPM ITS Surabaya	2011
	The 4th Asia-Oceania Neutron Scattering Association (AONSA) Neutron School (**Non Degree Training**)	Australian Nuclear Science and Technology Organisation (ANSTO), New Illawarra Road, Sydney, Australia	2011
	Doctor of Physics (Materials Science)	Institute of Technology 10 November Surabaya (ITS), Sukolilo Surabaya, Indonesia	2011 - 2016
	Sandwich Like DIKTI Program: Fabrication and characterization of ceramic dielectric properties using impedance analyzers and network analyzer in three different methods: (1) Contacting electrode method, (2) Parallel-plate method & (3) Perturbed resonator method. (**Non Degree Training**)	Bundesanstalt für Materialforschung und –prüfung (BAM), Berlin Germany	2013
	The 3rd Workshop on Transmission Electron Microscopy (**Non Degree Training**)	P2F LIPI Serpong	2015
	Karakterisasi mikrostruktur dengan Field Emission Scanning Electron Microscope (FESEM), (**Non Degree Training**)	Center for Material Processing and Failure Analysis, Departemen Teknik Metalurgi dan Material, Fakultas Teknik, Universitas Indonesia, Depok	2015
Employment	**Position**	**Employer**	**Period**
	Lecturer in Physics Study Program	Universitas Negeri Surabaya, Indonesia	1993 - Now
	The Coordinator of the Website Team in Faculty of Mathematics and Natural Sciences	Faculty of Mathematics and Natural Sciences, Universitas Negeri Surabaya, Indonesia	2017 - 2019

Research and development projects over the last 5 years	**Year**	**Title**	**Position**
	2021	Karakterisasi Keramik $(Mg_{0,8}Zn_{0,2})TiO_3$+ 6%wt. V_2O_5 Untuk Aplikasi Sebagai Resonator pada Sirkuit Dielektrik Resonator Osilator Yang Beroperasi Pada Frekuensi Gelombang Mikro (Grant – *IDR 35 Millions*)	Head Researcher

	2021	Fabrikasi dan Karakterisasi Keramik $(Mg_{0,5}Zn_{0,5})TiO_3$ Dengan Penambahan PEG Untuk Proyeksi Sebagai Resonator pada Sirkuit Dielektrik Resonator Osilator di Daerah Gelombang Mikro (Grant – *IDR 15 Millions*)	Head Researcher
	2020	Pengaruh Proses Double Boiler Pada Pengolahan Daun Sirih (Piper Betle) Untuk Menjaga Kandungan Zat Tanin Sebagai Antiseptik Alami Dalam Pembuatan Hand Sanitizer Untuk Mencegah Penyebaran COVID-19 (Grant – *IDR 12 Millions*)	Head Researcher
	2019	Karakterisasi Struktur dan Mikrostruktur Bahan Keramik Dielektrik Bi_2O_3-Doped $(Mg_{1-x}Zn_x)TiO_3$ (Grant - *IDR 45 Millions*)	Head Researcher
	2019	Doping Aluminium Hidroksida $(Al(OH)_3)$ pada Komposit Polyvinileden Fluoride-Cellulose Acetate (PVDF-CA) sebagai separator Lithium Ion. (*Grant – IDR 10 Millions*)	Research member
	2019	Study on heating profile of liquid-mixing synthesized $ZnTiO_3$ (*Self Funding – IDR 10 Millions*)	Head Researcher
	2018	The effect of heat treatment to the formation, decomposition and crystallinity of liquid-mixing-synthesized $ZnTiO_3$ (*Self Funding – IDR 10 Millions*)	Head Researcher
	2018	Sintesis dan Analisis Struktur Bahan Dielektrik Keramik $Mg(Ti_{1-x}Sn_x)O_3$ (*Grant – IDR 10 Millions*)	Head Researcher
	2017	Analisis kemampuan literasi keuangan dan matematika serta upaya membangun budaya literasi keuangan dan matematika siswa SD. (*Grant – IDR 50 Millions*)	Research Member
	2017	Dilatometric shrinkage study on magnesium titanate-based ceramic systems. (*Self Funding – IDR 10 Millions*)	Head Researcher
	2017	Contribution of relaxation effect to the permittivity of $Mg_{1-x}Zn_xTiO_3$ ceramics. (*Grant – IDR 10 Millions*)	Head Researcher
	2017	Grain size analysis on pure and Zn-doped Ilmenite Magnesium Titanate Powders. (*Self Funding – IDR 10 Millions*)	Head Researcher
	2016	Preparation and structural study of $Mg_{1-x}Zn_xTiO_3$ ceramics and their dielectric properties from 1 Hz to 7.7 GHz. (*Grant – EUROS 4,000*)	Head Researcher
	2015	A simple dissolved metals mixing route to prepare nanostructured $Mg_{0.8}Zn_{0.2}TiO_3$ solid solution. (*Self Funding – IDR 10 Millions*)	Head Researcher
	2014	A dissolving route in synthesis of high purity $Mg_{0.5}Zn_{0.5}TiO_3$ nanocrystal. (*Self Funding – IDR 10 Millions*)	Head Researcher
	2014	Comprehensive structural study on $Zn_xMg_{1-x}TiO_3$ solid solutions with total scattering data: A Preliminary study. (*Self Funding – IDR 10 Millions*)	Head Researcher
Patents and Proprietary Rights	**Year**	**Title**	**Certificate No.**
	2020	**PATENT:** Uji Aktivitas Antibakteri Ekstrak Sirih Hijau (Piper betle Linn) Asal Nganjuk, Sidoarjo dan Batu Terhadap Pertumbuhan Bakteri Escherichia Coli (ATCC 8739), Salmonella Sp. (ATCC 14028), Staphylococcus Aureus (ATCC 6538) dan Pseudomonas Aeruginosa (ATCC 9027) Tgl. 24 Dec. 2020	Reg. No. P00202010640
	2020	**PATENT:**	Reg. No. P00202006498

		Metode Fabrikasi Keramik Dielektrik $(Mg_{1-x}Zn_x)TiO_3$ Sebagai Dielektrik Resonator Osilator Yang Bekerja Pada Pita C Tgl. 4 September 2020	
	2020	**PROPRIETARY RIGHT:** MODULE - Blok Diagram Sirkuit DRO dan Blok Diagram Pengukuran Respon Frekuensi dan Daya Luaran DRO Pada C-Band untuk Keramik Dielektrik $(Mg_{1-x}Zn_x)TiO_3$ No. Aplikasi: EC00202032810 Tgl. 9 September 2020	000203671
	2020	**PROPRIETARY RIGHT:** ISBN BOOK - "Struktur Kristal Bahan Keramik". No. Aplikasi: EC00202013688 Tgl. 27 April 2020	000186067
	2020	**PROPRIETARY RIGHT:** MODULE - Perangkat Instrumen Tes Diagnostik Miskonsepsi Berformat Four-Tier Untuk Materi Suhu, Kalor dan Perpindahannya. No. Aplikasi: EC00202013699 Tgl. 27 April 2020	000186074
	2019	**PROPRIETARY RIGHT:** MODULE – Perangkat Instrumen Tes Diagnostik Miskonsepsi Berformat Four-Tier Untuk Materi ALAT OPTIK. No. Aplikasi: EC002019201947491 Tgl. 25 Juli 2019	000147901
	2019	**PROPRIETARY RIGHT:** MODULE - Perangkat Instrumen Tes Diagnostik Miskonsepsi Berformat Four-Tier Untuk Materi MOMENTUM DAN IMPULS. No. Aplikasi: EC00201941483 Tgl. 28 Mei 2019	000143300
	2019	**PROPRIETARY RIGHT:** MODULE - Perangkat Instrumen Tes Diagnostik Miskonsepsi Berformat Four-Tier Untuk Materi ARUS LISTRIK SEARAH. No. Aplikasi: EC00201941478 Tgl. 28 Mei 2019	000143301
	2019	**PROPRIETARY RIGHT:** MODULE - Perangkat Instrumen Tes Diagnostik Miskonsepsi Berformat Four-Tier Untuk Materi DINAMIKA ROTASI DAN KESETIMBANGAN BENDA TEGAR. No. Aplikasi: EC00201941484 Tgl. 28 Mei 2019	000143299
	2019	**PROPRIETARY RIGHT:** MODULE - Perangkat Instrumen Tes Diagnostik Miskonsepsi Berformat Four-Tier Untuk Materi FLUIDA DINAMIK. No. Aplikasi: EC00201941492 Tgl. 28 Mei 2019	000143281
	2019	**PROPRIETARY RIGHT:** MODULE - Instrumen Perangkat Pembelajaran Materi VEKTOR Dengan Metode Trigonometri Hand Trick. No. Aplikasi: EC00201940242	000142134

		Tgl. 15 Mei 2019	
	2019	**PROPRIETARY RIGHT:** MODULE - Instrumen Pembelajaran Materi PEMANTULAN GELOBANG TALI Berbasis Penilaian Kinerja. No. Aplikasi: EC00201938226 Tgl. 16 April 2019	000141342
	2019	**PROPRIETARY RIGHT:** ISBN BOOK - "Difraksi Sinar-X: Teori dan Analisis Data Eksperimen". No. Aplikasi: EC00201937275 Tgl. 8 April 2019	000139628
	2018	**PATENT:** Sintesis Serbuk $Mg(Ti_{1-x}Sn_x)O_3$ Dengan Tingkat Kemurnian Tinggi Hasil Preparasi Dari Pencampuran Larutan Dan Karakterisasi Strukturnya". Tgl. 10 Agustus 2018	Reg. No. P00201806029
	2018	**PROPRIETARY RIGHT:** ISBN BOOK - "Fisika Bahan Keramik" No. Aplikasi: EC00201808478 Tgl 08 April 2018	000104991
	2018	**PROPRIETARY RIGHT:** MODULE - Instrumen tes diagnostik miskonsepsi berformat Four-tier untuk materi USAHA DAN ENERGI. No. Aplikasi: EC00201808477 Tgl 08 April 2018	000104993
Important publications over the last 5 years	**Year**	**Authors, Title, DOI No. & Journal Name**	
	2021	Afandy Kadarosman and **F.U. Ermawati** (**The Corresponding Author – CA**) The Use of $(Mg_{0.9}Zn_{0.1})TiO_3$ +2wt.% Bi_2O_3 Ceramics as a Dielectric Resonator Oscillator Material and Characterisation of Structure, Microstructure and Density. Jurnal Neutrino:Jurnal Fisika dan Aplikasinya (Sinta 3) Vol. 13, No. 2, April 2021 (p.67-79) http://dx.doi.org/10.18860/neu.v13i2.11720	
	2021	**F.U. Ermawati** The Response of $(Mg_{0.6}Zn_{0.4})TiO_3$ Ceramic System as A Dielectric Resonator Oscillator at C-Band. IoP Conference Series: Journal of Physics: Conference Series (terindeks Scopus & SJR Q3), 1805 (2021) 012039 doi:10.1088/1742-6596/1805/1/012039	
	2021	**F.U. Ermawati** Sosialisasi Pemanfaatan Daun Sirih Hijau dari Pesanggrahan Batu Jawa Timur Sebagai Cairan Hand Sanitizer Alami Berdasarkan Hasil Uji Tanin dan Zat Antibakteri Kepada Masyarakat Setempat. Jurnal Dedication (Sinta 5) Vol. 5 No. 1 Maret 2021, hal. 61-70 https://doi.org/10.31537/dedication.v5i1.440	
	2021	Lailatul Izza and **F.U. Ermawati (The CA)** Characterization of $(Mg_{1.0}Zn_{0.0})TiO_3$+4 wt% Bi_2O_3 Ceramics for Application as Resonator in Dielectric Resonator Oscillator Circuit Jurnal Ilmu Fisika, Univ. Andalas Padang (Sinta 3) Vol. 13, No. 2, September 2021, pp. 62-69 https://doi.org/10.25077/jif.13.2.62-69.2021	
	2021	Elga Nilawati and **F.U. Ermawati (The CA)**	

		Karakterisasi Keramik $(Mg_{0,8}Zn_{0,2})TiO_3$+4wt% Bi_2O_3 sebagai Material Dielectric Resonator Oscillator, Struktur, Mikrostruktur dan Densitasnya Jurnal Fisika Unand (JFU), Univ. Andalas Padang (Sinta 4) Vol. 10, No. 2, April 2021, hal. 239-247 https://doi.org/10.25077/jfu.10.2.239-247.2021
	2021	Nisrina N. Ramadhani & **F.U. Ermawati (The CA)** Five-Tier Diagnostic Test Instrument for Uniform Circular Motion Concepts: Development, Validity, Reliability and Limited Trials. Jurnal Pendidikan Fisika (Sinta 3) Vol. 9 Issue 1, Feb. 2021, hal. 73-90 DOI: 10.26618/jpf.v9i1.4763
	2021	Indah Putri M. Sari & **F.U. Ermawati (The CA)** Instrumen Tes Diagnostik Konsepsi Lima Tingkat pada Materi Gerak Lurus: Pengembangan, Uji Validitas dan Reliabilitas serta Uji Coba Terbatas PENDIPA Journal of Science Education (Sinta 4) Vol. 5, Issue 2, Jan. 2021, hal. 152-162 DOI: https://doi.org/10.33369/pendipa.5.2.152-162
	2021	Widiya K. Putri & **F.U. Ermawati (The CA)** Pengembangan, Uji Validitas dan Reliabilitas Tes Diagnostik Five-Tier untuk Materi Getaran Harmonis Sederhana beserta Hasil Uji Coba PENDIPA Journal of Science Education (Sinta 4) Vol. 5 Issue 1, Okt. 2020, hal. 92-101 DOI: https://doi.org/10.33369/pendipa.5.1.92-101
	2020	Shofiatul Lailiyah & **F.U. Ermawati (The CA)** Materi Gelombang Bunyi: Pengembangan Tes Diagnostik Konsepsi Berformat Five-Tier, Uji Validitas dan Reliabilitas serta Uji Terbatas Jurnal Pendidikan Fisika Tadulako (Sinta 3) Vol. 8 Issue 3, Des. 2020, hal. 104-119
	2020	Lina Zendya & **F.U. Ermawati (The CA)** Pengaruh Variasi Tekanan Kompaksi Terhadap Mikrostruktur dan Densitas Keramik $(Mg_{0,9}Zn_{0,1})TiO_3$+ 2% wt Bi_2O_3 Hasil Sintesis Menggunakan Metode Pencampuran Larutan. Inovasi Fisika Indonesia Vol. 09 Issue 02, 2020, p. 145-151
	2020	Feby Y. Rostianbudi & **F.U. Ermawati (The CA)** Fabrikasi dan Karakterisasi Struktur dan Densitas Keramik $(Mg_{0,5}Zn_{0,5})TiO_3$+xwt.% Bi_2O_3 Sebagai Kandidat Material Dielekrik Inovasi Fisika Indonesia Vol. 09 Issue 02, 2020, p. 72-77
	2020	Nanda Rettiningtyas & **F.U. Ermawati (The CA)** Sintesis dan Fabrikasi Keramik (Mg0,8Zn0,2)TiO3+2 wt% Bi2O3 Sebagai Bahan Dielektrik Serta Karakterisasi Struktur dan Densitasnya Akibat Variasi Waktu Tahan Sinter. Inovasi Fisika Indonesia Vol. 09 Issue 02, 2020, p. 25-33
	2020	Durrotun Nisa' & **F.U. Ermawati (The CA)** Fabrikasi Keramik $(Mg_{0,6}Zn_{0,4})TiO_3$+x wt.% Bi_2O_3 Hasil Sintesis Dengan Metode Pencampuran Larutan dan Pengaruh Variasi x wt.% Bi_2O_3 Terhadap Struktur dan Densitas Keramik Inovasi Fisika Indonesia Vol. 09 Issue 02, 2020, p. 15-20
	2020	Noriyatus S. Fajriyyah & **F.U. Ermawati (The CA)** The Validity and Reliability of Five-Tier Conception Diagnostic Test For Kinetic Theory of Gases Inovasi Pendidikan Fisika Vol. 09 No. 02, Juni 2020, 126-132
	2020	Mirza Qonita & **F.U. Ermawati (The CA)** The Validity and Reliability of Five-Tier Conception Diagnostic Test For Vector Concepts Inovasi Pendidikan Fisika Vol. 09, No. 03, September 2020, 459-465

	2020	Fadhilah Nur Salsabila & **F.U. Ermawati (The CA)** Validity and Reliability of Conception Diagnostic Test Using Five-Tier Format For Elasticity Concepts Inovasi Pendidikan Fisika Vol. 09, No. 03, September 2020, 439-446
	2020	**F U Ermawati** The Use of Liquid Mixing Method to Prepare Ilmenite Structure-Based Ceramic Powders. Journal of Physics: Conference Series Vol 1491. https://iopscience.iop.org/article/10.1088/1742-6596/1491/1/012004
	2020	R Aisahsari and **F U Ermawati (The CA)** Evaluating Student's Misconceptions and The Causes on Direct Current Concepts by Means of Four-Tier Multiple Choice Test. Journal of Physics: Conference Series Vol 1491. https://iopscience.iop.org/article/10.1088/1742-6596/1491/1/012009 doi:10.1088/1742-6596/1491/1/012009
	2020	E M Jannah and **F U Ermawati (The CA)** Identify 11th Grade of Senior High School Jogoroto students' misconceptions on Dynamic Rotation and Rigid Body Equilibrium concepts using Four-Tier Diagnostic Test. Journal of Physics: Conference Series Vol 1491. https://iopscience.iop.org/article/10.1088/1742-6596/1491/1/012010 doi:10.1088/1742-6596/1491/1/012010
	2020	F Rohmanasari and **FU Ermawati (The CA)** Using Four-Tier Multiple Choice Diagnostic Test to Identify Misconception Profile of 12th Grade Students In Optical Instrument Concepts. Journal of Physics: Conference Series Vol 1491. https://iopscience.iop.org/article/10.1088/1742-6596/1491/1/012011 doi:10.1088/1742-6596/1491/1/012011
	2020	D M Kurniawati and **F U Ermawati (The CA)** Analysis Students' Conception Using Four-Tier Diagnostic Test for Dynamic Fluid Concepts Journal of Physics: Conference Series Vol 1491. https://iopscience.iop.org/article/10.1088/1742-6596/1491/1/012012 doi:10.1088/1742-6596/1491/1/012012
	2019	**F.U. Ermawati (The CA)**, S. Anggrayni, L. Isfara Misconception profile of students in senior high school IV Sidoarjo East Java in work and energy concepts and the causes evaluated using Four Tier Diagnostic test IoP Conference Series: Journal of Physics: Conference Series. 1387 (2019) 012062 https://iopscience.iop.org/article/10.1088/1742-6596/1387/1/012062 doi:10.1088/1742-6596/1387/1/012062
	2019	**F.U. Ermawati (The CA)**, N.A. Imamah Study on Heating Profile of Liquid-mixing-synthesized $ZnTiO_3$. DOI:10.1088/1757-899X/599/1/012010 IoP Conference Series: Materials Science and Engineering. 599 (2019) 012010 https://iopscience.iop.org/issue/1757-899X/599/1 doi:10.1088/1757-899X/599/1/012010
	2019	**F.U. Ermawati (The CA)**, M. H. Ahfa and Supardiyono Phase composition and particle size distribution in $Mg(Ti_{1-x}Sn_x)O_3$ powders. DOI: 10.1088/1742-6596/1171/1/012038 IoP Conference Series: Journal of Physics: Conference Series. 1171 (2019) 012038

		https://iopscience.iop.org/issue/1742-6596/1171/1 doi:10.1088/1742-6596/1171/1/012038
	2019	S. Anggrayni and **F.U. Ermawati (The CA)** The validity of Four-Tier's misconception diagnostic test for Work and Energy concepts. DOI: 10.1088/1742-6596/1171/1/012037 IoP Conference Series: Journal of Physics: Conference Series. 1171 (2019) 012037 https://iopscience.iop.org/issue/1742-6596/1171/1
	2018	**F.U. Ermawati (The CA)**, Z.A.I. Supardi, S. Suasmoro, S. Pratapa Contribution of relaxation effect to the permittivity of $Mg_{1-x}Zn_xTiO_3$ ceramics. DOI: 10.1088/1757-899X/367/1/012003 IoP Conference Series: Materials Science and Engineering. 367 (2018) 012003 https://iopscience.iop.org/issue/1757-899X/367/1
	2018	**F.U. Ermawati (The CA)**, S. Suasmoro Dilatometric shrinkage study on magnesium titanate-based ceramic systems. DOI: 10.1088/1742-6596/997/1/012005 IoP Conference Series: Journal of Physics: Conference Series. 997 (2018) 01 https://iopscience.iop.org/issue/1742-6596/997/12005
	2017	**F.U. Ermawati** Grain size analysis on pure and Zn-doped Ilmenite Magnesium Titanate Powders. Http://omega.uhamka.ac.id/ Omega: Jurnal Fisika dan Pendidikan Fisika Vol. 3(1), 15-22 (2017)
	2016	**F.U. Ermawati (The CA)**, S. Pratapa, S. Suasmoro, T. Hubert, U. Bannach Preparation and structural study of $Mg_{1-x}Zn_xTiO_3$ ceramics and their dielectric properties from 1 Hz to 7.7 GHz. DOI: 10.1007/s10854-016-4610-6 Journal of Materials Science: Materials in Electronics Vol. 27(7) (2016) 6637-6645. https://link.springer.com/journal/10854/27/7
	2015	**F.U. Ermawati (The CA)**, S. Suasmoro and Suminar Pratapa A simple dissolved metals mixing route to prepare nanostructured $Mg_{0.8}Zn_{0.2}TiO_3$ solid solution. DOI: 10.4028/www.scientific.net/AMR.1112.47. Advanced Materials Research. Vol. 1112 (2015) 47-52.

Book Written	**Year**	**Title & No. of Pages**	**ISBN No. & Publisher**
	2019	Struktur Kristal Bahan Keramik (127 Pages)	978-602-449-375-2 Unipress UNESA
	2018	Difraksi Sinar-X: Teori dan Analisis Data Eksperimen (142 Pages)	. 978-602-449-209-0 Unipress UNESA
	2017	Fisika Bahan Keramik (92 pages)	978-602-449-047-8 Unipress UNESA

Activities in specialist bodies	**Organization**	**Position**	**Period**
	Materials Research Society of Indonesia (MRS-Id)	Member No. 26218368AB	Valid until January 2023
	Physical Society of Indonesia (PSI)	Member No. 10201500106	Valid until 31 Dec. 2021
	Perkumpulan Pendidik IPA Indonesia (PPII)	Member No. 847/PPII/2017	Valid until 2023