Dr. Yakup Bakış, PhD

Doctor of Philosophy in Physics

Semiconductor & Nanotechnology Specialist

Advanced Instrumentation & Method Validation (ISO/IEC 17025)

Materials Characterization • Spectroscopy • Quality/Validation • Reporting

Hands-on multi-instrument lab experience + ISO 17025 documentation & uncertainty modeling.

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Researcher ID : E-1909-2017
Scopus Author ID : 55502986100
Google Scholar : Google Scholar Profile

Education

PhD, Physics (08/2005 - 09/2011)
Gebze Technical University, Gebze, Kocaeli-Turkey, **GPA: 3.79 / 4.00**

THESIS: Investigation of $A^3B^3C^6_2$ Ferroelectric Semiconductor with Dielectric Spectroscopy
Advisor: Prof. Dr.Rauf Süleymanlı
PhD Research Funding: TÜBİTAK Project (2006–2009)

Master of Science, Physics (05/2003 -07/2005)
Gebze Technical University, Gebze, Kocaeli-Turkey, **GPA: 2.71 / 4.00**

THESIS: Dielectric Spectroscopy Of Layered $TlInS_2$ Crystal
Advisor: Prof. Dr. Ferid Salehli

Master of Education, Physics (08/2001-04/2003)
Marmara University, Ataturk Education Faculty, Istanbul-Turkey
(Non-Thesis Master's program)

Bachelor of Science, Physics, (03/1995-09/1998)
Istanbul University, Istanbul/Turkey **GPA: 64 / 100**
Experimental study on neutron activation energy.

Advanced Laboratory Infrastructure & Accreditation Development
OPTOMED Calibration & Metrology Training Center (2021–2023)
R&D Laboratory Specialist

- Designed and implemented full ISO/IEC 17025 compliant laboratory documentation system
- Method verification/validation planning, uncertainty propagation, and reporting discipline aligned with ISO/IEC 17025.
- Developed all uncertainty calculation spreadsheets for:
  - Volume calibration
  - Torque calibration
  - Temperature calibration
- Prepared laboratory procedures and accreditation documentation
- Conducted experimental validation and performance verification
- Implemented Excel-based automated uncertainty propagation models
- Contributed to electrical calibration system development (project phase)

Method/Validation/Reporting Strength

- method development
- validation
- uncertainty / QC

- SOP
- ISO 17025 documentation
- reporting templates (Excel)

Instrument Experience (CORELAB-aligned)

Hands-on (actively used / strong experience):

- FT-IR Spectroscopy
- UV-Vis Spectrophotometry (UV-Vis / UV-Vis-IR)
- Raman Spectroscopy
- SEM (FE-SEM)
- XRD, XRF
- AFM
- Electrical & semiconductor characterization (Keithley SCS-4200, Keithley 6517B, LCR, Novocontrol dielectric spectroscopy)

Familiar (conceptual + limited exposure / confident with workflow):

- AAS (Atomic Absorption Spectroscopy)
- NMR (workflow familiarity)

Training-ready / willing to learn (high motivation + transferable skills in method development/validation):

- UHPLC / HPLC
- LC-MS/MS
- GC-MS
- GPC
- HRMS

Additional lab instruments (workflow familiarity / quick onboarding):

- Spectrofluorometer
- ITC (Isothermal Titration Calorimetry)
- Particle size & Zeta potential analyzer
- NanoDrop
- Viscometer, Refractometer
- Ultracentrifuge

Certified Professional Instrument Training

All instruments were actively operated for 6+ years in research and production environments.

Top 6 Training (***Full training list available upon request)***

- Advanced XRD Training – RIGAKU (Japan), 15 Days (2011)
- Raman Spectroscopy – Thermo Scientific DXR2 (2012)
- FT-IR Spectroscopy – Thermo Nicolet 6700 (2012)
- High Resolution SEM Training – Tekser Corp (JEOL JSM-7001F FE-SEM)
- XRD Training – Tekser Corp – RIGAKU SmartLab
- XRF Training – Tekser Corp – RIGAKU ZSX Primus II

Advanced Instrumentation & Cleanroom Leadership (6+ Years)

(6+ Years Active Operational & Process Development Experience)

- Thin Film Growth & Micro/Nano Fabrication
- Electron Beam Deposition
- Magnetron RF-DC Sputtering
- Organic Evaporation Systems
- Plasma Enhanced Chemical Vapor Deposition (PECVD)

- Reactive Ion Etching (RIE)

Electrical & Semiconductor Characterization

- Semiconductor Parameter Analyzer (Keithley SCS-4200)
- Dielectric Spectroscopy (Novocontrol)
- LCR Meter & Electrometer (Keithley 6517B)

Optical & Spectroscopic Characterization

- UV-Vis-IR Transmission / Reflection / Photoluminescence
- Lock-In Amplifier Systems (Stanford SR850)

Research Expertise

- Nanotechnology and Nanofabrication
- Semiconductor Physics and Dielectric Spectroscopy
- Advanced Spectroscopy & Characterization (materials characterization, thin films, spectroscopy, electrical characterization)
- Method development, validation, instrumental analysis, reporting, quality compliance (ISO 17025)

Leadership & Research Coordination

- Organic Electronics & Photovoltaics Research Group, Group leader (OEPR Group)
  Coordinated 4 national research projects.

Language skills

English August 2021 YÖKDil ; 68,75 Kasım 2017 YÖKDil ; 72.5

Publications

- **Total journal publications:** 11 (SCI/SCI-E: *WoS verified*)
- **Total citations:** 238 (Google Scholar)
- **h-index:** 7 (Google Scholar)
- **i10-index**:6 (Google Scholar)

Journal Articles

- Karatutlu A., Patil B., Seker İ., Istengir S., Bolat A., Yildirim O., Sevgen, Y.N., Bakis Y., Ortac B., Yilmaz E., Sapelkin A., "Structural, Optical, Electrical and Electrocatalytic Activity Properties Of Luminescent Organic Carbon Quantum Dots", Chemistry Select, May 8, 2018 Volume3, Issue17, pp 4730-4737
- Bakıs Y., Auwal I. A., Ünal B.,Baykal A.,"Conductivity and dielectric properties of $SrLa_xBi_xY_xFe_{12-3x}O_{19}$ ($0.0 \le x \le 0.33$) hexaferrites" Ceramics International, 42 (2016) 11780-11795
- Demir A., Güner S., Bakis Y., Esir S., Baykal A., "Magnetic and Optical Properties of $Mn_{1-x}Zn_xFe_2O_4$ Nanoparticles", 2014, Journal Of Inorganic And Organometallic Polymers And Materıals