







Efstathios (Stathis) Tsoutsoumanos

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Sex: Male | Date of Birth: 17/03/1993 | Nationality: Hellenic | Residence: Athens

WORKING EXPERIENCE AND SKILLS:

05/2021 – Present

PhD Researcher

Institute of Nanoscience and Nanotechnology (INN), National Centre for Scientific Research “Demokritos”

Group: Age assessment using radiometric techniques; applications, basic research and new technologies

- Data Analysis using various Computational methods
- Study of Stimulated Luminescence phenomena through Simulations
- Nanodosimetry, Radiation Dosimetry, Materials Science and Computational Modeling

05/2021 – Present

PhD Researcher/ PhD Student

Condensed Matter Physics Laboratory (CoMPhy Lab), University of Thessaly

https://www.phys.uth.gr/en/comphy_lab_en/

- Theoretical and Computational methods & techniques across multiple scales in Condensed Matter Physics and Materials Science.
- Methods for studying, analyzing behavior and predicting properties of complex dynamical systems using both analytical and simulation methods

09/2018 – 05/2021

Research Assistant

Laboratory of Atomic and Nuclear Physics, Aristotle University of Thessaloniki

https://www.physics.auth.gr/en/sections/2/research_activities

- Thermoluminescence Study of Beryllium Oxide (BeO: Li+, Al+)
- Isothermal Decay and Tunneling Effect Study of CaSO₄ [Dy,Tm], BeO
- Dose Response of CaSO₄ [Dy,Tm], BeO, Feldspar (Nepal), LiF

EDUCATION:

05/2021 - Expected 05/24

Doctor of Philosophy (PhD) in Physics

University of Thessaly, Lamia (Greece)

Faculty of Sciences, Physics Department

<http://old.uth.gr/en/index.php>

<https://www.phys.uth.gr/en/>

Doctoral Thesis: 05/21 – Expected 05/24

- **Department of Physics, University of Thessaly:**
"Study of the phenomenological models of Stimulated Luminescence in microscale and nanoscale dimensions through simulations in programming environment"

PhD Advisor Committee: Prof. Theodoros Karakasidis (Supervisor), Prof. George Kitis, Dr. George S. Polymeris

09/2019 - 04/2021

Master of Science (MSc) in Econophysics – Financial Forecasting

University of Thessaly, Volos & Lamia (Greece)

Faculty of Economics and Administrative Sciences, Department of Economics

Faculty of Sciences, Physics Department

<http://econophysics.uth.gr/en/>

<http://old.uth.gr/en/index.php>

<https://www.econ.uth.gr/en/>

<https://www.phys.uth.gr/en/>

International Hellenic University, Thessaloniki (Greece)

Faculty of Sciences, Physics Department

<https://www.ihu.gr/en/home>

https://physics.ihu.gr/?page_id=4540#

Master Thesis: 09/2020 – 02/2021

- **Department of Economics, University of Thessaly:**
"Rare Earths and Critical Metals Prices Analysis, correlation with technological advancements and Investment Portfolio formation"

Under the supervision of Prof. Theodoros Karakasidis

<https://www.phys.uth.gr/thkarak/>

09/2011 - 09/2018

Bachelor of Science (BSc) in Physics

University of Ioannina, Ioannina (Greece)

Faculty of Sciences, Physics Department

<https://www.uoi.gr/en/>

<http://www.physics.uoi.gr/en/>

Bachelor Thesis: 10/2017 - 07/2018

- **Laboratory of Atomic and Nuclear Physics, Physics Department, Aristotle University of Thessaloniki:**
"Response of Beryllium Oxide to beta particle radiation: Thermoluminescence Study & Determination of Energy Levels"

Under the supervision of Prof. Samuel Cohen (University of Ioannina)

and Prof. George Kitis (Aristotle University of Thessaloniki)

<http://www.physics.uoi.gr/el/node/468>

<https://www.physics.auth.gr/en/sections/2/people/33>

09/2008 - 08/2011

Graduate Student (High School)

3rd General High school of Alexandroupolis, Alexandroupolis (Greece)

<http://3lyk-alexandr.evr.sch.gr/>

PUBLICATIONS:

- E. Tsoutsoumanos**, P.G. Konstantinidis, G.S. Polymeris, V. Pagonis, T. Karakasidis, G. Kitis, "Electron trap filling and emptying through simulations: Comparison between the shift of the T_m in Thermoluminescence peaks and the t_m in Linearly Modulated Optically Stimulated Luminescence" (Submitted to Radiation Measurements)
- P. Konstantinidis, **E. Tsoutsoumanos**, G.S. Polymeris, G. Kitis "Recombination pathways in a BeO yielding two main dosimetric TL peaks" (Submitted to Radiation Measurements)
- K. Prevezanou, G. Kioselaki, **E. Tsoutsoumanos**, P.G. Konstantinidis, G.S. Polymeris, V. Pagonis, G. Kitis "Implementation of expressions based on Lambert-W function in deconvolution of stimulated luminescence curves and dose response fitting analysis using Python" (Submitted to Radiation Measurements)
- G.S. Polymeris, S. Çoskun, **E. Tsoutsoumanos**, P. Konstantinidis, E. Aşlar, E. Şahiner, N. Meriç, G. Kitis, "Dose response features of quenched and reconstructed, TL and deconvolved OSL signals in BeO" Results in Physics, Vol. **25** (2021) 104222
DOI: <https://doi.org/10.1016/j.rinp.2021.104222>
- P. Konstantinidis, **E. Tsoutsoumanos**, G. S. Polymeris, G. Kitis, "Thermoluminescence response of various dosimeters as a function of irradiation temperature", Radiation Physics and Chemistry, Vol. **177**, (2020) 109156
DOI: <https://doi.org/10.1016/j.radphyschem.2020.109156>

ORAL PRESENTATIONS:

- **Integration of Neodymium and Critical Metals for innovative applications and technologies: A Financial perspective**
E. Tsoutsoumanos, S. Papadamou, T. Karakasidis
XXXV-SSM - 35th Panhellenic Conference on Solid State Physics and Materials Science (Online, 26-29/09/21)
- **Python: An innovative tool in Luminescence for Cultural Heritage purposes**
E. Tsoutsoumanos, G.S. Polymeris, G. Kioselaki, K. Prevezanou, P. Konstantinidis, T. Karakasidis and G. Kitis
eRA 2021 - 14th International Scientific Conference "Industry 4.0" (Online, 30/6/2021)

POSTER PRESENTATIONS:

- **General Order Kinetics (GOK) vs One Trap One Recombination model (OTOR); Kinetic order – Retrapping ratio correlation in simulated LM-OSL curves using Deconvolution, Peak Shape Methods and Machine Learning**
E. Tsoutsoumanos, G.S. Polymeris, P. Konstantinidis, T. Karakasidis, G. Kitis
XXXV-SSM - 35th Panhellenic Conference on Solid State Physics and Materials Science (Online, 26-29/09/21)
- **Examining the fitting of Luminescence dose response curves from scientific literature with Lambert-W function using Python**
G. Kioselaki, K. Prevezanou, P. Konstantinidis, **E. Tsoutsoumanos**, G. S. Polymeris, V. Pagonis, G. Kitis
XXXV-SSM - 35th Panhellenic Conference on Solid State Physics and Materials Science (Online, 26-29/09/21)
- **Activation energy calculation using PID, Initial Rise and Peak Shape Methods in a BeO yielding double main TL dosimetric peaks**
P. Konstantinidis, **E. Tsoutsoumanos**, G.S. Polymeris, G. Kitis
XXXV-SSM - 35th Panhellenic Conference on Solid State Physics and Materials Science (Online, 26-29/09/21)
- **Implementation of expressions based on Lambert-W function for deconvolution of stimulated luminescence curves using Python**
K. Prevezanou, G. Kioselaki, **E. Tsoutsoumanos**, G.S. Polymeris, P. Konstantinidis, V. Pagonis and G. Kitis
XXXV-SSM - 35th Panhellenic Conference on Solid State Physics and Materials Science (Online, 26-29/09/21)
- **Dependence of the LM-OSL peak shape on trap filling and trap emptying - Comparison with TL**
E. Tsoutsoumanos, P. Konstantinidis, G.S. Polymeris, V. Pagonis, T. Karakasidis and G. Kitis
LED2021 - 16th International Luminescence and Electron Spin Resonance Dating conference (Online, 13-17/09/21)
- **Recombination pathways in a BeO yielding two main dosimetric TL peaks**
P. Konstantinidis, **E. Tsoutsoumanos**, G.S. Polymeris, G. Kitis
LED2021 - 16th International Luminescence and Electron Spin Resonance Dating conference (Online, 13-17/09/21)
- **Implementation of expressions based on Lambert-W function in deconvolution of stimulated luminescence curves and dose response fitting analysis using Python**
K. Prevezanou, G. Kioselaki, **E. Tsoutsoumanos**, P.G. Konstantinidis, G.S. Polymeris, V. Pagonis, G. Kitis
LED2021 - 16th International Luminescence and Electron Spin Resonance Dating conference (Online, 13-17/09/21)
- **NASDAQ Composite analysis using Principal Component Analysis, Multiple Linear Regression and Cluster Analysis for the period 5/2019 and 5/2020**
E. Tsoutsoumanos, T. Karakasidis
CCS2020 - International Conference on Complex Systems 2020 (Online, 4-11/12/2020)
- **Phosphorescence Decay in Beryllium Oxide (BeO: Li⁺, Al³⁺)**
E. Tsoutsoumanos, P. Konstantinidis, G. Kitis
XXXIV SSM 2019 - 34th Annual Panhellenic Conference on Solid State Physics and Materials Science (Patras, Greece, 11-14/09/2019)
- **TL Dose response of Beryllium Oxide (BeO) radiation dosimeter at elevated temperatures,**
E. Tsoutsoumanos, P. Konstantinidis, G. Kitis
HNPS2019 - 28th Annual Symposium of the Hellenic Nuclear Physics Society (Thessaloniki, Greece, 31/5-1/6/2019)
- **Radiation dose response of TL dosimeters at elevated temperatures**
P. Konstantinidis, **E. Tsoutsoumanos**, G. Kitis
HNPS2019 - 28th Annual Symposium of the Hellenic Nuclear Physics Society (Thessaloniki, Greece, 31/5-1/6/2019)

OTHER SKILLS:

Programming Skills in:

- Time Series Analysis, Statistics, Applied Mathematics
- Econometrics, Forecasting Modelling techniques
- ARIMA, ARCH, VAR models
- Monte Carlo Simulations
- Long Short-Term Memory - Neural Networks
- Dynamical Systems, Chaos Theory, Catastrophe Theory

Software:

- MATLAB
- EViews
- SPSS
- Origin
- Tableau
- Maxima
- Visual Recurrence Analysis
- Microsoft Office

Conferences Attendance:

- XXXV-SSM - 35th Panhellenic Conference on Solid State Physics and Materials Science (Online, 26-29/09/21)
- LED2021 - 16th International Luminescence and Electron Spin Resonance Dating conference (Online, 13-17/09/21)
- eRA 2021 - 14th International Scientific Conference "Industry 4.0" (Online, 30/6/2021)
- CCS2020 - International Conference on Complex Systems 2020 (Online, 4-11/12/2020)
- XXXIV SSM 2019 - 34th Annual Panhellenic Conference on Solid State Physics and Materials Science (Patras, Greece, 11-14/09/2019)
- HNPS2019 - 28th Annual Symposium of the Hellenic Nuclear Physics Society (Thessaloniki, Greece, 31/5-1/6/2019)
- 15th International Conference "Nanotechnology 2018" (Thessaloniki, 30/06-07/07/2018)
- 17th Panhellenic Conference of Physics, Association of Greek Physicists (Thessaloniki, 15/03-18/03/2018)

Native Language: Greek

Foreign Languages: English
German