

Dr. Denis E. Tranca (30) is currently acting as Lecturer in Physics at the Faculty of Applied Science of University Politehnica of Bucharest (UPB). His interest in Optics and Photonics began in 2010 when he earned a 4-months research studentship at Laboratoire Matériaux Optiques, Photonique et Systèmes – SUPÉLEC University, Metz, France. During this period he conducted research on the topic of soliton interactions in photorefractive materials. Following his return, he pursued a MSc course in Optoelectronics, and then enrolled for PhD studies in the field of high- and super-resolution imaging. He received his PhD title from UPB after defending his thesis entitled "New Techniques for High-Resolution Optical Microscopy" in 2015. His main contribution during his doctoral work dealt with the development and optimization of a set of apertureless Scanning Near-field Optical Microscopy techniques and tools and connected applications in the fields of materials science, optoelectronics and biophotonics.

Since 2011 he joined the Center for Microscopy-Microanalysis and Information Processing (CMMIP) – University POLITEHNICA of Bucharest, Romania (www.cmmip-upb.org), where he carried research first as Research Assistant and then as Postdoc Researcher. His main activities at CMMIP are related to fundamental and applied research in high resolution scanning optical microscopy areas (Laser Scanning Techniques and Scanning Probe Techniques), but also in image processing, information engineering and software engineering. Denis participated so far in several international and national research projects, more prominent being (a) the European CORDIS FP7- "Label Free Nanoscopy Using Infra Red" (2012-2015, http://lanir.eu/), (b) the national collaborative grant "PN-II-PT-PCCA-2011: New methods and investigations protocols for the early diagnosis, efficient screening, pronostic and therapy of non-melanoma skin cancers based on existing and novel micro & nano optical tools" (2012-2016), (c) the national research grant for establishing a team of young researchers "PN-II-TE-2014: Correlation and integration of microscopy and nanoscopy data by advanced computer vision methods" (2015-2017) and in (d) the national grant for developing an experimental model "PN-III-PED-2016: An Experimental Machine Intelligence Framework for the Automated Differentiation of Healthy, Dysplastic and Malignant Tissues Based on Multiphoton Microscopy Datasets" (2017-2018); the latter two being led by the CORIMAG Director. Denis also acted as Principal Investigator, implementing between 2014 and 2015 a research grant that was awarded to him by University POLITEHNICA of Bucharest in the frame of the POSDRU/159/1.5/S/137390 human resources project funded by the European Social Fund. Denis' complete CV (together with an extended list of journal articles and conferences) can be accessed online at: http://cmmip-upb.org/detranca_cv.pdf

Selected Publications:

- **Tranca, D. E.**, Stanciu, S. G., Hristu, R., Stoichita, C., Tofail, S. A. M., & Stanciu, G. A. (2015). High-resolution quantitative determination of dielectric function by using scattering scanning near-field optical microscopy. *Scientific reports*, *5, 11876*.
- **Tranca, D. E.**, Sánchez-Ortiga, E., Saavedra, G., Martínez-Corral, M., Tofail, S. A., Stanciu, S. G., ... & Stanciu, G. A. (2016). Mapping electron-beam-injected trapped charge with scattering scanning near-field optical microscopy. *Optics letters*, *41*(5), 1046-1049
- **Tranca, D. E.**, Stoichita, C., Hristu, R., Stanciu, S. G., & Stanciu, G. A. (2014). A study on the image contrast of pseudo-heterodyned scattering scanning near-field optical microscopy. *Optics express*, *22*(2), 1687-1696.
- Hristu, R., Stanciu, S. G., **Tranca, D. E**., Matei, A., & Stanciu, G. A. (2014). Nonlinear optical imaging of defects in cubic silicon carbide epilayers. *Scientific reports*, *4*.
- Dragoi, I. C., Stanciu, S. G., Hristu, R., Coanda, H. G., **Tranca, D. E.**, Popescu, M., & Coltuc, D. (2016). Embedding complementary imaging data in laser scanning microscopy micrographs by reversible watermarking. *Biomedical Optics Express*, *7*(4), 1127-1137.
- Stanciu, S. G., **Tranca, D. E.**, & Coltuc, D. (2015). Contrast enhancement influences the detection of gradient based local invariant features and the matching of their descriptors. *Journal of Visual Communication and Image Representation*, *32*, 246-256.