

CURRICULUM VITAE AND LIST OF PUBLICATIONS• **Education**

B.Sc. - 1991-1994 – Tel-Aviv University – Physics, Magna Cum Laude.

B.Sc. - 1991-1994 – Tel-Aviv University – Mathematics, Magna Cum Laude.

M.Sc. - 1994-1997 – Weizmann institute of science - Physics

Advisor: Prof. Moti Heiblum

Title: Spatial correlation of ionized donors and its effect on scattering time and spin splitting in 2DEG

Ph.D. - 1997-2002 – Tel-Aviv University – Electrical Engineering/ Physical electronics

Advisor: Prof. Yossi Rosenwaks

Title: Nanoscale Electrical Characterization of Semiconductors Using Kelvin Probe Force Microscopy

Journal publications

Published:

1. R. Shikler, M.Heiblum, and V. Umansky, “Spatial correlation of ionized donors and its effect on scattering time and spin splitting in a two-dimensional electron gas”, *Phys. Rev. B*, **55**, 15427-15430 (1997). SI 7 IF 3.774 Q1
2. R. Shikler, T. Meoded, N. Fried, and Y. Rosenwaks, “Potential Imaging of Operating Light Emitting Devices using Kelvin Force Microscopy”, *Appl. Phys. Lett.*, **74**, 2972-2974 (1999). SI 50 IF 3.841 Q1
3. R. Shikler, T. Meoded, N. Fried, and Y. Rosenwaks, “Two Dimensional Surface Band Structure of Operating Semiconductor Devices”, *J. Appl. Phys.* **86**, 107-113 (1999). SI 24 IF 2.079 Q1
4. T. Meoded, R. Shikler, N. Fried, and Y. Rosenwaks, “Direct Measurement of Minority Carrier Diffusion Length using Atomic Force Microscopy”, *Appl. Phys. Lett.*, **75**, 2435-2437 (1999). SI 30 IF 3.841 Q2
5. R. Shikler, T. Meoded, N. Fried, N. Ashkenazy, and Y. Rosenwaks, “Novel application of Kelvin force microscopy”, *J. Elec. Mater.* **28**, 1024 (1999). SI 0 IF 1.421 Q2
6. R. Shikler, T. Meoded, N. Fried, and Y. Rosenwaks, “Measuring Minority-Carrier Diffusion Length using a Kelvin Probe Force Microscope”, *Phys. Rev. B.*, **61**, 11041-11046, (2000). SI 27 IF 3.774 Q1
7. R. Shikler, and Y. Rosenwaks, “Kelvin Probe Force Microscopy Using Near-field Optical Force Sensors”, *Appl. Surf. Sci.*, **157**, 256-262 (2000). SI 3 IF 1.795 Q2
8. R. Shikler, and Y. Rosenwaks, “Near-Field Surface Photovoltage”, *Appl. Phys. Lett.*, **77**, 836-839, (2000). SI 0 IF 3.841 Q1
9. S. Saraf, R. Shikler, and Y. Rosenwaks, “Microscopic Surface Photovoltage Spectroscopy.” *Appl. Phys. Lett.*, **80**, 2586 (2002) . SI 5 IF 3.841 Q1

10. M. Lesnykh, M. Molotski, P. Urenski, R. Shikler, G. Rosenman, and Y. Rosenwaks, "Scanning Probe Microscopy of Well-Defined Ferroelectric Domain Structure." *Appl. Phys. Lett.*, **80**, 1806 (2002). SI 17 IF 3.841 Q1
11. G. Lubarsky, R. Shikler, N. Ashkenasy, and Y. Rosenwaks, "Quantitative evaluation of local charge trapping in dielectric stacked gate structures using Kelvin probe force microscopy" *J. Vacuum. Sci. Technol. B.*, **20** 1914 (2002). SI 8 IF 1.271 Q2
12. S. Sadewasser, T. Glatzel, R. Shikler, Y. Rosenwaks, M.C. Lux-Steiner, "Resolution of Kelvin probe force microscopy in ultrahigh vacuum: comparison of experiment and simulation", *Appl. Surf. Sci.*, **210**, 32 (2003). SI 33 IF 1.795 Q2
13. T. Glatzel, S. Sadewasser, R. Shikler, Y. Rosenwaks, M.C. Lux-Steiner, "Kelvin probe force microscopy on III-V semiconductors: the effect of surface defects on the local work function", *Mater. Sci. & Eng. B.*, **B102**, 138 (2003). SI 18 IF 1.1 Q3
14. Duhayon N., Eyber P., Fouchier M., Clarysee, T., Vandervorst W., Alvarez D., Schoemann S., Ciappa M., Stangoni M., Fichtner W., Formanek P., Kittler M., Raineri V., Giannazzo, F., Goghero D., Rosenwaks Y., Shikler R., Saraf S., Sadewasser S., Barreau N., Glatzel T., Verheijen M., Mentink S. A. M.; von Sprekelsen M., Maltezopoulos T., Wiesendanger R., Hellemans L., "Assessing the performance of two-dimensional dopant profiling techniques.", *J. Vacuum. Sci. Technol. B.*, **22**, 385 (2004). SI 39 IF 1.271 Q2
15. Rosenwaks Y., Shikler R., Glatzel T., Sadewasser S., "Kelvin probe force microscopy of semiconductor surface defects.", *Phys. Rev. B.*, **70**, 85320 (2004). SI 68 IF 3.774 Q1
16. Marco Chiesa, Lukas Bürgi, Ji-Seon Kim, Rafi Shikler, Richard H. Friend, and Henning Sirringhaus, "Correlation between Surface Photovoltage and Blend Morphology in Polyfluorene-Based Photodiodes", *Nano Lett.* **4**, 559 (2005). SI 95, IF 12.219 Q1
17. Rafi Shikler, Marco Chiesa, and Richard H. Friend, "Photovoltaic Performance and Morphology of Polyfluorene Blends: the influence of phase separation evolution", *Macromolecules*, **39**, 5393 (2006) SI 21 IF 4.838 Q1
18. Rafi Shikler and R. H. Friend, "Absorption Enhancement in Polymer Photocells using Periodic structures", *J. Appl. Phys.* **102**, 013105 (2007). SI 1 IF 2.079 Q1
19. Korzov M., Shikler R. and Andelman D. "Dreaming in Plastic", *Physics World*, 29 (2008). SI 0 IF 0.561 Q3
20. Shikler R. and Rosenwaks Y. "Response to 'Comment on 'Direct measurement of minority carriers diffusion length using Kelvin probe force microscopy'" *Appl. Phys. Lett.* **96**, 216102 (2010). SI 0 IF 3.841 Q1
21. Linde S.; Carella A; R. Shikler "New Approach for Analyzing the Vertical Structure of Polymer Thin Films Based on Surface-Enhanced Raman Scattering" *Macromolecules* **45**, 1476 (2012). SI 0 IF 4.838 Q1
22. A. Carella; F. Borbonea; A. Rovielloa; G. Roviello; A. Tuzia; A. Kravinsky; R.

Shikler; G. Cantelee; D. Ninno “Benzodifuroxazinones, a new class of heteroacene molecules for possible applications in organic electronics: Synthesis, electronic properties and crystal structure” *Dye and Pigment*. **95** 116 (2012). SI 0 IF 3.126 Q1

23. Sudheendran Mavila, Charles E. Diesendruck, Sivan Linde, Liron Amir, Rafi Shikler, N. Gabriel Lemcoff “ Polycyclooctadiene Complexes of Rhodium(I): Direct Access to Organometallic Nanoparticles”, accepted for publication *Angewandte Chemie*. 52 1 (2013) IF 13.455 Q1
24. M. Rumbak; I. Visloy-Fisher; R. Shikler “Broadband absorption enhancement via light trapping in periodically patterned polymeric solar cells”, Accepted to *J. Appl. Phys.* IF 2.079 Q1

Papers in Hebrew

1. Korzov M., Shikler R. and Andelman D. “Conducting Polymers: The New Generation of Plastic Electronics” (in Hebrew) *Galileo* (Jan. 2008).

Book chapters:

1. Y. Rosenwaks and R. Shikler, “Nanoscale Electronic Measurements of Semiconductors using Kelvin Probe Force Microscopy”, NATO Science Series II: Mathematics, Physics, and Chemistry. Vol 186 2004.
2. Shikler R. - “Electronic surface properties of semiconductor surfaces and interfaces” In Kelvin probe force microscopy, Sascha Sadewasser and Thilo Glatzel Ed. Springer series in surface science (2012)

Conference papers:

1. R. Shikler, T. Meoded, N. Fried, and Y. Rosenwaks, “Potential Imaging of Operating Light- Emitting Diodes using Kelvin Force Microscopy”, STM 99, Seoul 1999.
2. T. Meoded, R. Shikler, and Y. Rosenwaks, “Direct Measurement of Minority Carrier Transport using Atomic Force Microscopy”, STM 99, Seoul 1999.
3. R. Shikler, G. Lubarsky, and Y. Rosenwaks, “Nanometer Characterization of Semiconductors Using Kelvin probe Force Microscopy”, Proc. 9th Sde Boker Symposium on Solar Electricity Production, Sde Boker July 1999.
4. R. Shikler and R. H. Friend “Modeling the effect of the structure of polymer photocells on their absorption spectrum” Sde Boker Symposium on Solar Energy 2009.
5. R. Shikler “Modeling the effect of the structure of polymer photocells on their absorption spectrum” IEEEI 2008 Eilat, Israel
6. S. Linde and R. Shikler “Degradation study of a polyfluorene F8BT: understanding organic solar cell degradation of the individual component” Sde Boker Symposium on Solar Energy 2011.
7. Ma'yan Rumbak, Rafi Shikler, Iris Visoly Fisher, “Light trapping in P3HT:PCBM solar cells: Towards Improved Spectrum Utilization” Sde Boker Symposium on Solar Energy 2013.