JANUARY, 2020

Curriculum Vitae

1. PERSONAL DETAILS

Name: Lior Miller

ID No: 031978414

Date of Birth: December 27, 1974.

Place of Birth: Haifa, Israel.

Citizenship: Israeli

Marital status: Married +3.

Home address: 18a Ha'emek Street, Kiryat Tivon, 36084, Israel

Telephone: 077-4041174 (home)

Mobile: 054-2492333

E-mail address: liormill@rafael.co.il ; liormiller@gmail.com

Languages: Hebrew and English, excellent skills written and spoken.

2. ACADEMIC DEGREES

2007- 2013 PhD. in Materials Engineering, Purdue University, West Lafayette, IN 47907, USA

Research topic: "Nanoparticle Doped Water: From Particle Structure to Water Properties".

Supervisors: Prof. Alex King, Prof. Eric Stach.

Graduation date: 2013

2004-2006 Technion-Israel Institute of Technology, Department of Materials Engineering, M.Sc.

Research topic: "Processing and Microstructure of Aluminum Oxynitride (AlON)".

Supervisor: Assoc. Prof. Wayne D. Kaplan

1999-2004 Technion-Israel Institute of Technology, Double Major: B.Sc. in Materials Engineering *and* B.A in Chemistry. Cum Laude

3. TEACHING EXPERIENCE:

Teaching assistant in the School of Material Science and Engineering in Purdue University

and in the Department of Materials Engineering in the Technion, for the following courses:

Year	Course name	Institute
2007-2008	Materials science and engineering lab MSE 335: Optical microscopy	Purdue University, West Lafayette, IN, USA
2005-2006	Advanced laboratory for Materials Engineering: Scanning Electron Microscopy	Technion, Haifa, Israel
2005	Microstructural Characterization of Materials	Technion, Haifa, Israel
2004	Introduction to Materials Engineering	Technion, Haifa, Israel

4. PROFESSIONAL BACKGROUND

11/2017-Today RAFAEL- Advanced Defense Systems LTD.

Packaging Engineer in the department of Microsystems.

Within this position I am responsible for packaging processes and machines such as solder sphere placement, high accuracy flip chip bonding, die attach and wafer dicing.

2014-11/2017 Expert R&D process engineer at TowerJazz Semiconductor.

Within this position I was responsible for MEMS process development and integration including FE process development, lithography manual alignment,

back side alignment, DRIE, characterization of starting material, wafer grinding, wafer dicing, wafer bonding, etc.

The integration part included time and tasks management, working with project and company management, meeting with customers, writing reports and improving processes and process flow.

12/2012-2014 Senior R&D process engineer at TowerJazz Semiconductor.

Within this position I was responsible for R&D process development in various topics such as wafer backside grinding, Taiko grinding, processing transparent substrates, thin film deposition process optimization, wafer backside metallization, wafer dicing etc.

7/2011-12/2012 Photo lithography R&D process engineer at TowerJazz Semiconductor.

Within this position I was in charge of photolithography process development such as PR bake temperatures, nano dots processing etc, and supporting production proceses.

1/2007-12/2010 Biotechnology company that applies nanotechnology into the Pharma industry.

Last position: Materials, Composition & Process Scientific Manager.

Within this position I was in charge and performed research using various methods, including: high resolution transmission electron microscopy (HRTEM) and scanning transmission electron microscopy (STEM); electron energy loss spectroscopy (EELS) and environmental EELS; scanning electron microscopy (SEM), HRSEM and Cryo-SEM; optical microscopy, Xray diffraction (XRD) and scattering; dynamic light scattering (DLS) used both for particle size measurements and for zeta potential measurements; water quality measurements using total organic carbon (TOC) analyzer, pH and conductivity; contact angle measurements; and also outsourcing using infra-red spectroscopy (NIR and ATR-FTIR), Raman spectroscopy, circular dichroism (CD) and Inductively Coupled Plasma (ICP). Administratively I was in charge on planning the research budget, negotiating the purchasing of new instruments and was in frequent contact with the service

5/2005-12/2006 Biotechnology company that applies nanotechnology into the Pharma industry. Consultant for Materials Engineering and Electron Microscopy.

2001-3/2004 Lab assistant, Ceramic Laboratory, Department of Materials Engineering, Prof. Wayne D. Kaplan, Technion, Haifa, Israel.

1999-2001 Security officer in the "Internal General Security Service of Israel"

1997-1999 Bodyguard of senior public officials in the "Internal General Security Service of Israel" (Shabak).

5. CONFERENCES

1. Lior Miller and Alexander H. King "Nanoparticles-doped water: structure, properties & applications", Second Annual Conference on The Physics, Chemistry and Biology of Water October 18-21, 2007 West Dover, Vermont
2. Lior Miller and Wayne D. Kaplan, "Solubility Limits of La and Y in Aluminum Oxynitride (AlON) at 1870°C", Presented at the 40th Annual Meeting - Israel society for Microscopy (ISM), May 10-11 2006, Kibbutz HaGoshrim, Israel
3. Lior Miller and Wayne D. Kaplan, "Solubility Limits of La and Y in Aluminum Oxynitride (AlON) at 1870°C", oral presentation at the 12th Israel Materials Engineering Conference (IMEC-12), March 1-2, 2006, Beer Sheva, Israel
4. Lior Miller and Wayne D. Kaplan, "Processing Aluminum Oxynitride", Presented at the 107th annual meeting of the American Ceramic Society, April 10-13 2005, Baltimore, U.S.A.
5. Lior Miller, Amir Avishi and Wayne D. Kaplan, "Direct Measurements of PPM-Level Solubility Limits in Polycrystalline Ceramics: *MgO in* Al_2O_3", Presented at the 107th annual meeting of the American Ceramic Society, April 10-13 2005, Baltimore, U.S.A
6. Lior Miller, Amir Avishai and Wayne D. Kaplan, "A New Approach to Measuring Solubility Limits of ppm Levels in Polycrystalline Ceramics: MgO in Al_2O_3", Presented at the 38th Annual Meeting - Israel society for Microscopy (ISM), May 11 2004, Hebrew University of Jerusalem, Jerusalem, Israel.
7. Lior Miller, Mike Lieberthal and Wayne D. Kaplan, "Processing Aluminum Oxynitride", Presented at the 11th Israel Materials Engineering Conference (IMEC-11), December 24 - 25, 2003, Technion - Israel Institute of Technology, Technion City, Haifa, Israel.

6. PUBLICATIONS:

1. **L. Miller** and W. D. Kaplan, "Solubility Limits of La and Y in Aluminum

Oxynitride at 1870°C", Journal of the American Ceramic Society, [91], 1693-1696, (2008).

2. **L. Miller** and W. D. Kaplan, "Water-Based Method for Processing Aluminum Oxynitride (AlON)", International Journal of Applied Ceramic Technology, [5], 641-648, (2008).
3. **L. Miller**, A. Avishai and W.D. Kaplan, "Solubility Limit of MgO in Al2O3 at 1600°C", Journal of the American Ceramic Society, 89[1]: 350-353, (2006).
4. Y. Katsir*, **L. Miller***, Y. Scolnik, Y. Aharonov and E. Ben-Jacob, "Electrochemical Deposition in RF-Irradiated Solutions - A Manifestation of Induced Long Range Order?" ECS Transactions, [11], 71-81, (2008).
   * These authors have equal contribution
5. Y. Katsir*, **L. Miller***, Y. Aharonov and E. Ben Jacob, "The effect of RF-irradiation on electrochemical deposition and its stabilization by nanoparticle doping", Journal of the Electrochemical Society, 154[4]: D249-D259 (2007).
   * These authors have equal contribution
6. S. Harosh, **L. Miller**, G. Levi and M. Bamberger, "Microstructure and properties of Mg–5.6%Sn–4.4%Zn–2.1%Al alloy", Journal of Materials Science, [42], 9983-9989, (2007).

7. QUALIFICATION IN EXPERIMENTAL METHODS:

1. High Resolution Transmission Electron Microscope (**HRTEM/STEM**) with aberration corrector, monochromator and Energy Dispersive Spectrometer (**EDS**), (FEI TITAN 80-300).
2. Environmental High Resolution Transmission Electron Microscope (**HRTEM/STEM**, FEI TITAN 80-300).
3. Electron Energy Loss Spectroscopy (**EELS**) and environmental EELS, both combined with HRTEM (FEI TITAN 80-300).
4. Scanning Electron Microscope (**SEM**, FEI XL30, FEI Quanta 200) combined with Energy Dispersive Spectroscopy (**EDS**, Oxford Instruments) and Wavelength Dispersive Spectroscopy (**WDS**, Oxford Instruments).
5. High Resolution Cryo Scanning Electron Microscope (FEI Nova nanoSEM **FESEM**).

6. X-Ray diffractometer (**XRD**, Philips PW-3020).
7. Transmission Electron Microscope (**TEM**, JEOL FX 2000, FEI Tecnai T20).
8. High Resolution Transmission Electron Microscope (**HRTEM**, JEOL 3010UHR).
9. High Resolution Scanning Electron Microscope (**HRSEM**, LEO Gemini 982).
10. Computerized Optical Microscope + Advanced Image Analysis toolbox (**AnalySIS + Cell P**).
11. Particles size and zeta potential measurements (Malvern nanoZ, Nicomp PSS 380).

8. MILITARY SERVICE

1995-1996 Special combat unit: "Sayaret Egoz"

1993-1995 Special combat unit: "Sayeret Matkal"