

## CURRICULUM VITAE

### **Dr. Michal ARBEL HADDAD**

Birth date: 3/12/1962

Place of Birth: Rehovoth, ISRAEL

### **ACADEMIC DEGREES:**

1987- BSc in Chemistry, The Hebrew University of Jerusalem

1991- MSc in Applied Chemistry, The Hebrew University of Jerusalem

1997 – PhD, the Faculty of Chemistry, Weizmann Institute of Science, Rehovoth

### **FURTHER RESEARCH EXPERIENCE:**

Sep 1997 – Jul 1998 Post-Doctoral fellow, URA 1281 CNRS, Université Paris-Sûd, France

Aug 1998 – Aug 2007 Research Chemist, Department of Chemistry, NRCN

Sep 2007 – Aug 2008 Visiting Scientist, Geopolymer Group, Department of Chemical Engineering, University of Melbourne, Australia

Sep 2008 – Dec 2008 Research Chemist, Department of Chemistry, NRCN

Jan 2009 – present Head of Corrosion Laboratory, Department of Chemistry, NRCN

### **FELLOWSHIPS AND PRIZES:**

Outstanding Studentship Award for the academic year of 1986-1987, The Faculty of Mathematics and Sciences, The Hebrew University of Jerusalem

Eshkol Scholarship for PhD studies, 1993-1996, The Ministry of Science, Israel

Chateaubriand Post-Doctoral Scholarship, 1997-1998, The Foreign Ministry, France

Katzir Research Fellowship, 1998-2004, Dept of Chemistry, NRCN

### **THESES:**

A Study of the Mechanism of Acid Extraction by Acid-Base Couple Extractants, Thesis for the degree of MSc in Applied Chemistry, The Hebrew University of Jerusalem, 1991

Supervisor: Dr. A. Eyal

Studies of Mixed Thin Films at the Air-Water Interface in Relation with Crystal Nucleation, Thesis for the degree of PhD, Weizmann Institute of Science, Rehovoth, 1997

Supervisors: Prof. Meir Lahav and Prof. Leslie Leiserowitz

### **STUDENTS SUPERVISED:**

Co-Supervisor, MSc research project of Mr. P Huber,

Dept. of Materials Engineering, Ben Gurion University of the Negev, Beer-Sheva

Thesis title: Structural and Electrochemical Characterization of Two-Phase Al-Ce Alloys,  
July 2006

Co-Supervisor, undergraduate research project of Mr. Y. Toister and Mr. Paz Yabo,

Dept. of Materials Engineering, Ben Gurion University of the Negev, Beer-Sheva

Thesis title: Evaluation of the Corrosion Resistance of Amorphous and Crystalline Al-Ce Alloys, September 2006

Co-Supervisor, MSc research project of Ms. E. Ben-Yaish,

Dept. of Materials Engineering, Ben Gurion University of the Negev, Beer-Sheva

Thesis topic: Anodization of Al Alloys, July 2008

Co-Supervisor, PhD research project of Ms. E. Ofer-Rozovsky,

Dept. of Civil and Environmental Engineering, Technion, Haifa

Thesis title: Geopolymers as Matrices for Nuclear Waste Immobilization

### **RESEARCH GRANTS:**

2009-2012 Grant by: the council for higher education and the Israel atomic energy committee. PIs: Michal Arbel-Haddad (NRCN), Gabriela Bar-Nes (NRCN) and Amnon Katz (Technion). Subject: "Geopolymers as materials for stabilization and immobilization of radioactive waste", Grant for 3 years with approximately 200,000 NIS/year.

2011-2014 Grant by: Israel atomic energy committee. Collaboration between CEA and IAEC. PI's: Gabriela Bar-Nes (NRCN), Michal Arbel-Haddad (NRCN) and Valerie L'Hostis (CEA-LECBA). Subject: "LLW immobilization in cementitious pastes and geopolymers: the effect of carbonation/irradiation degradation mechanisms on the matrix microstructure and transport properties of the immobilized waste". Grant for 4 years with approximately 170,000 NIS/year.

### **INTERNAL REPORTS:**

Author and co-author of 45 propriety reports, NRCN.

### **PUBLICATIONS IN REFEREED JOURNALS:**

A.M. Eyal, M. Arbel Haddad, E. Bressler, New Concepts in Extration by Acid-Base Couple Extractants, *Process. Metall.*, 1992, *7a*, (Solvent Extracion and Ion Exchange, Pt A), 333-338.

J. Majewski, R. Popovitz-Biro, R. Edgar, M. Arbel Haddad, K. Kjaer, W. Bouwman, J. Als-Nielsen, M. Lahav, L. Leiserowits, An Insight into the Ice Nucleation Process via Design of Crystalline Ice Nucleators of Variable Size, *J Phy Chem B*, 1997, *101*, 8874.

M. Arbel Haddad, M. Lahav, L. Leiserowits, The Design of Mixed Langmuir Films Exposing Segregated Hydroxyl Domains for Inducing Ice Nucleation, *J Phy Chem B*, 1998, *102*, 1543-1548.

L. Dahabi, M. Arbel Haddad, P. Lessiuer, C. Bourgaux, M. Ollivon, A Long Ripple Phase in DLPC-Decylglucoside Mixture Evidenced by Synchrotron SAXS coupled to DSC, *Chemistry and Physics of Lipids*, 2006, 102, 43-53.

G. Bar-Nes, Y. Peled, M. Arbel Haddad, Y. Zeiri, A. Katz, The Effect of High Salt Concentration on the Integrity of Silica-Fume Blended Cementitious Matrices for Waste Immobilization, *Materials and Structures*, 2011, 44(1), 291-297.

### **PRESENTATIONS AT CONGRESSES:**

M. Arbel Haddad, K. Kjaer, J. Als-Nielsen, M. Lahav, L. Leiserowits, Lateral Order within Mixed Thin Films Composed of Mono- or Bi- Functional Alcohols and Alkanes at the Air-Water Interface, presented as a poster, 11<sup>th</sup> International Symposium on Surfactants in Solution, Jerusalem, June 1996.

M. Arbel Haddad, M. Lahav, L. Leiserowits, The Design of Mixed Thin Films for Inducing Ice Nucleation, presented as a poster, 62<sup>nd</sup> meeting of the Israel Chemical Society, Haifa, 1997.

M. Arbel Haddad, M. Ollivon, P. Lessiuer, Supramolecular Phospholipid-Surfactant Intermediate Phase as Studied by DSC and X-ray Diffraction, presented as a poster, 64<sup>th</sup> meeting of the Israel Chemical Society, Bar Ilan University, 1999.

P. Huber, E. Sabatani, Y. Golan., Y. Dahan, J. Sariel, M. Arbel-Haddad, Structural and Electrochemical Characterization of Al-Ce Alloys, presented as a poster at the First Israeli Conference on Corrosion Processes and Advanced Materials, Beer-Sheva, May 2003.

P. Huber, E. Sabatani, Y. Golan., M. Arbel-Haddad, Characterization of Composite Al-Ce Oxide Layers, presented as a poster, 11<sup>th</sup> conference of the Israeli Material Engineering Society, Haifa, December 2003.

P. Huber, E. Sabatani, Y. Golan., M. Arbel-Haddad, Corrosion Resistance of Composite Al-Ce Oxide Layers, presented as a poster, 69<sup>th</sup> meeting of the Israel Chemical Society, Tel Aviv, February 2003.

P. Huber, E. sabatani, Y. Golan., M. Arbel-Haddad, Structural Characterization and Corrosion Resistance of Composite Al-Ce Oxide Layers, presented as a poster, 4<sup>th</sup> Kurt Schwabe Corrosion Symposium, Helsinki University, Espoo, Finland, June 2004.

M. Arbel Haddad, G. Bar-Nes, Y. Peled, Y. Zeiri, A. Katz, The Effect of High Salt Concentration on the Integrity of Silica-Fume Blemded Cementitious Matrices for Waste Immobilization Applications, presented as a poster, Advanced Materials for Nuclear Waste Applications, Braga, Italy, 1997.

E. Ofer-Rozovsky, M. Arbel Haddad, G. Bar-Nes, A. Katz, Immobilization of Low-Level Wastes in Geopolymeric Systems, oral presentation, 26<sup>th</sup> conference of the Nuclear Societies in Israel, Dead Sea, Israel, February 2012..

E. Ofer-Rozovsky, M. Arbel-Haddad, G. Bar-Nes, A. Katz, Phase development in geopolymeric systems at moderate temperatures, IMEC-16, February 23-25, 2014, Technion, Israel, Oral presentation

E. Ofer-Rozovsky, M. Arbel-Haddad, G. Bar-Nes, A. Katz, Geopolymerization at moderate temperatures in the presence of nitrate anion, accepted for an oral presentation at NUWCEM2014 conference, June 3-6, Avignon, France