

March, 2014

CURRICULUM VITAE

Gabriela Bar-Nes

1. Personal Data:

Date and Place of birth: February 14, 1965, La Plata , Argentina .

Marital status: Married, three children.

Present position: Head of waste treatment group, Chemistry Department,
NRCN

Address: (Work) Chemistry Department
NRCN, P.O.B. 9001
Beer-Sheva 84190, Israel
Tel: +972-8-6568717
(Home) 5 Rakefet st.
Lehavim, 85338, Israel
Tel: +972-8-6512731, mob: +972-506232096
Email: gabi.barnes@gmail.com

2. Education:

PhD: 2006 Department of Materials and Performance, Faculty of Civil and Environmental Engineering, Technion, Haifa, Israel. Thesis: "Strontium and Cesium Immobilization in Cementitious Materials" under the supervision of Prof. Amnon Katz, Prof. Arnon Bentur and Prof. Yehuda Zeiri

M.Sc.: 1993 Chemical Engineering Department, Ben-Gurion University of the Negev, Israel. Thesis: "Copolymers of Polyisoprene: Synthesis and Product Characterization", under the supervision of Prof. Moshe Gottlieb.

B.Sc.: 1989 Department of Chemistry, Division of Biophysical Chemistry, Ben-Gurion University of the Negev, Israel

3. Research activities:

2007-today: Head of waste treatment group, Chemistry Department, NRCN

Main research activities:

1. Waste Immobilization in cementitious pastes and geopolymers:
 - a. Mechanisms of ion transport
 - b. The effect of the matrix composition on the microstructure and transport properties.
 - c. Degradation mechanisms: (microbial, radiation, carbonation, thermal)
2. Thermal and Irradiative degradation of polymers and elastomers.
3. Pyrolysis of solid organic waste

2006-2007 Sabbatical - Visiting scholar at the Key Centre for Polymer Colloids, School of Chemistry, The University of Sydney, Australia

Main research activities: Development of novel barrier products using RAFT controlled emulsion polymerization. Under the supervision of Prof. R. Gilbert.

1996-2006 Research staff, Chemistry Department, NRCN.

Recipient of the Aharon Katzir grant.

1994-1996: Senior researcher, R&D Department "Carbon Membranes co."

Main research activities:

1. Developing a method for separation of H₂/CH₄ gas mixtures – effects of parameters such as composition, temperature and pressure on the separation efficiency.
2. Effect of pretreatments on the membrane's morphology, permeability and selectivity
3. Mechanisms of Gas Transport through molecular sieve carbon membranes

Research Grants

2002-2006 Grant by: the council for higher education and the Israel atomic energy committee. PIs: Gabriela Bar-Nes (NRCN), Yehuda Zeiri (NRCN) and Alex Sivan (BGU). Subject: "Influence of microorganisms on the ion transport through cement and clay media". Grant for 5 years with approximately 170,000 NIS/year.

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.

4. Teaching experience:

Teaching Assistant at the Chemical Engineering Department in the following courses:

Introduction to Chemical Engineering 1 & 2

Principles of Chemical Engineering 1 (Momentum transfer- fluid dynamics)

Principles of Chemical Engineering 2 (Heat transfer)

5. Undergraduate Students Supervised:

1. Supervision of the final project of Mrs. Elias Pnina, Chemistry Department, The Technological College, Beer-Sheva, Israel.

Project title: "Developing a Carbon Membrane for Gas Separation and Permeability Measurements" (1996)

2. Co-Supervision of the final project of Mr. Oz Gazit, Department of Chemical Engineering, Ben Gurion University of the Negev, Beer-Sheva, Israel.

Project title: "Irradiative Degradation Mechanism of Polypropylene" (2004)

3. Co-Supervision of the final project of Mr. Dolev Rimerman, Department of Chemical Engineering, Ben Gurion University of the Negev, Beer-Sheva, Israel. Project title: "Irradiative Degradation of Polypropylene – the effect of anti-oxidants" (2005)
4. Co-Supervision of a PhD student – Vikashni Sharma, Key Centre for Polymer Colloids, School of Chemistry, University of Sydney, Australia. Project title: "Development of Novel Barrier Products using RAFT Controlled Emulsion Polymerization" (2006)
5. Co-Supervision of a PhD student – Ella Ofer, faculty of civil and environmental engineering, Technion, Haifa. Thesis title: "Immobilization of low-level wastes containing Cs in geopolymeric systems", (2010)
6. Co-Supervision of the final project of Yael Peled, Department of chemical engineering, Sami Shamoon College of engineering. Project title: 'pyrolysis and gasification of HDPE', (2011)