October 2021

CURRICULUM VITAE - Gabriela Bar-Nes

1. Personal Details:

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

Present position: Researcher and head of the applied chemistry laboratory, Chemistry Department, NRCN.

Address: (work) Chemistry Department
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2. Education:

Ph.D. 2006 Department of Materials and Performance, Faculty of Civil and Environmental Engineering, Technion, Haifa. 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. 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

3. Employment History:

2016-today: Head of the applied chemistry laboratory, Chemistry Department, NRCN

2020-today Adjunct senior lecturer, Department of Civil and Environmental Engineering, Ben-Gurion University.

2020-2020 Sabbatical in the Research lab of Prof. Alva Peled, Department of Civil and Environmental Engineering, Ben-Gurion University.

2007-2016: Head of waste treatment R&D group, Applied Chemistry laboratory, Chemistry Department, NRCN

2006-2007: Sabbatical – Visiting Scholar in the Key Centre for Polymer Colloids – School of Chemistry the University of Sydney Australia. Under the supervision of Prof. Robert Gilbert.

1996-2006: Research staff, Physical Chemistry Department, NRCN.

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

4. Educational activities

4.1. Courses taught

2021 – "Waste and Building materials", Department of Civil and Environmental Engineering, Ben-Gurion (graduate course)
2022- "Hazardous Waste Management", Department of Civil and Environmental Engineering & Department of Geology and Environmental Studies, Ben-Gurion (graduate course – taught with Dr Ofra Klein-BenDavid)
2019-2021 "Chemistry for Structural Engineering". Department of Civil and Environmental Engineering, Ben Gurion University (undergraduate course)
2016-2020 "Radioactive waste – sources, treatment and challenges", Unit of Energy Engineering, Ben Gurion University (graduate course)

4.2. Research Students

PhD students supervised:

2012-2017 Co-supervision as advisor (with Prof. Amnon Katz and Dr Michal Arbel-Haddad) of Ella Ofer, Faculty of Civil and Environmental engineering, Technion, Haifa. Thesis title: Immobilization of low-level wastes containing Cs in geopolymeric systems"
2018-today Co-Supervision (with Prof. Alva Peled and Dr Ofra Klein BenDavid) of Matan Shiner, Department of Geology and Environmental Studies, Ben Gurion University of the Negev, Beer Sheva. Thesis title: "Radionuclide retention in ordinary Portland cement and model compounds in the context of nuclear waste disposal".
2019-today Co-Supervision (with Prof. Alva Peled and Dr Ofra Klein BenDavid) of Rebbeca Wilson (PhD), Department of Geology, Ben Gurion University of the Negev, Beer Sheva. Thesis title: "Waste to resource – development of sustainable building materials from industrial waste".
2021-today Co-Supervision (with Prof. Alva Peled and Dr Ofra Klein BenDavid) of Samuel Kalode (PhD candidate) Department of Structural Engineering, Ben Gurion University of the Negev, Beer Sheva.

MSc students supervised:

2016-2018 Co-Supervision (with Prof. Alva Peled) of Ehud Cohen, Unit of Energy Engineering, Ben Gurion University of the Negev, Beer-Sheva, Thesis:"Development of geopolymeric sustainable alternative building materials from mine tailing and industrial waste streams".

2016-2018 Co-Supervision (with Prof. Alva Peled and Dr Ofra Klein BenDavid) of Matan Shiner, Department of Geology, Ben Gurion University of the Negev, Beer Sheva. Thesis: "Radionuclide retention in ordinary Portland cement and model compounds in the context of nuclear waste disposal".

2017-2019 Co-Supervision (with Prof. Alva Peled) of Dotan Gever, Unit of Energy Engineering, Ben Gurion University of the Negev, Beer Sheva. Thesis: "Developing a cap layer for near surface disposal of radioactive waste".

2018-2020 Co-Supervision (with Prof Ira Weinstock and Ofra Klein BenDavid) of Yonathan Harnik (MSc), Department of Chemistry, Ben Gurion University of the Negev, Beer Sheva. Thesis: "Immobilization of Cs in nitrate-bearing alumino-silicates".

2019-2021 Co-Supervision (with Prof. Alva Peled) of Idan Dagan, Unit of Energy Engineering, Ben Gurion University of the Negev, Beer Sheva. Thesis: "Development of geopolymers based on oil shale ash and industrial waste".

5. Professional activities

5.1. Ad-hoc reviewer for journals:

Journal of Hazardous Materials (Elsevier)
Construction and Building Materials (Elsevier)
Journal of Nuclear Materials (Elsevier)
Annals. Of Nuclear Energy (Elsevier)
Journal of Cleaner Production (Elsevier)

5.2. Research Grants

2002-2006 Grant by: The Council for higher education and the Israel Atomic Energy Commission PIs: Gabriela Bar-Nes(NRCN), Yehuda Zeiri (NRCN) and Alex Sivan (BGU). Subject: Influence of microorganisms on ion transport through cement and clay media. Grant for 5 years with approximately 170,000NIS per year.

2009-2012 Grant by: The Council for higher education and the Israel Atomic Energy Commission. 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 200,000NIS per year.

2011-2014 Grant by: Israel atomic energy committee. Collaboration between CEA and IAEC, PIs: Gabriela Bar-Nes (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 170,000NIS per year.

2015-2017 Grant by: Israel Department of Energy and Infrastructures. PIs: Gabriela Bar-Nes (NRCN) and Alva Peled (BGU). Subject: Development of geopolymeric alternative building materials from mine tails and industrial waste streams. Grant for 3 years with approximately 200,000NIS per year.

2017-2020 Grant by: Israel Atomic Energy Commission. Collaboration between CEA and IAEC, PIs: Gabriela Bar-Nes (NRCN) and Florent Lemont (CEA-Marcoule). Subject: Catalytic Pyrolysis, Combustion and Plasma Decomposition of Organic Waste". Grant for 4 years with approximately 100,000NIS per year.

2018-2021 Grant by: Israel Atomic Energy Commission. Collaboration between IRSN and IAEC, PIs: Gabriela Bar-Nes (NRCN), Alexandre Dauzeres (IRSN), Alva Peled (BGU). Subject: Carbonation impact on radionuclide retention properties in hardened cement pastes in the context of nuclear disposal facility. Grant for 4 years with approximately 120,000NIS per year.

2020-2022 Grant by: Israel Ministry of Infrastructures, Energy and Water resources. PIs: Gabriela Bar-Nes (NRCN), Ofra Klein BenDavid (NRCN) and Alva Peled (BGU). Subject: Development of geopolymers from industrial, mining and quarrying waste, with high durability to marine environment. Grant for 3 years with approximately 110,000NIS per year.

2020-2022 Grant by: Israel Ministry of Science. PIs: Gabriela Bar-Nes (NRCN), Ofra Klein BenDavid (NRCN) and Alva Peled (BGU). Subject: Waste to Resource: Development of Environmentally Friendly & Sustainable Building Materials from Industrial Waste. Grant for 3 years with approximately 400,000NIS per year.

2021-2024 Grant by: Pazy Foundation. PIs: Gabriela Bar-Nes (NRCN) and Simon Emmanuel (HUJI). Subject: "Characterizing the effect of reactive fluids on the physical and chemical properties of cementitious materials used in radioactive waste disposal. Grant for 3 yrs with approximately 300,000NIS per year.

5.3. Invited lectures – Seminar presentations

2006, Key Centre for Polymer Colloids, School of Chemistry, University of Sydney, Australia, , "Cesium and Strontium immobilization in cementitious pastes".
2007, Department of Chemical and Biomolecular Engineering, University of Melbourne, Australia, , "Immobilization of low-level waste containing Cesium and Strontium in cement based systems".
2011, Department of Chemical Engineering, Sami Shamoon College of Engineering, Beer-Sheva, "Waste immobilization in cementitious matrices".
2014, Department of Chemistry, NRCN, "Radioactive waste immobilization in cementitious matrices". .
2016, Unit of Energy, Ben Gurion University, Effects of carbonation, irradiation and temperature on Strontium immobilization in a cementitious matrix".
2017, Department of Civil and Environmental Engineering, Vanderbilt University, Nashville Tennessee, USA, "Formation of zeolites in metakaolin-based geopolymers and their potential application for Cs immobilization".
2017, Department of Materials Science and Engineering, Rutgers the State University of New Jersey, USA, "Sr immobilization in irradiated Portland cement pastes exposed to carbonation".
2019, Institute of Nuclear Waste Disposal (KIT-INE), Karlsruhe Institute of Technology, Karlsruhe, Germany, "Sr retention in irradiated portland cementpaste exposed to carbonation"
2020, Department of Structural Engineering, Ben Gurion University, Beer-Sheva, Israel, "Portland cement based matrices for nuclear waste immobilization"
2021, Department of Environmental Engineering, Ben-Gurion University, Beer-Sheva, "Cement based materials for conditioning of radioactive waste streams"

5.4. Workshop Organization/session chairing in conferences

2nd international symposium on cement-based materials for nuclear wastes, NUWCEM2014, 2-6th, Avignon, France .June 2014, Co-chair of session: "Cement-waste formulation design"

3rd international symposium on cement-based materials for nuclear wastes, NUWCEM2018, October 2018, Avignon, France Avignon, France, Co-chair of session: "Geopolymers"

29th Conference of the Nuclear Societies in Israel, Hertzelia – INS 2018 , Chair of session: "Radioactive waste and the environment"

NNSA-IAEC Topic Area V Workshop: Waste management and subsurface science. 5-7 December 2017, The Jacob Blaustein Institutes for Desert Research, Ben-Gurion University, Sde Boqer Campus – Workshop organization including preparation of the agenda, leading the discussions and serving as the workshop chairman.

NNSA-IAEC Topic Area V Workshop: Waste management and subsurface science. 11-12 November 2019, The Jacob Blaustein Institutes for Desert Research, Ben-Gurion University, Sde Boqer Campus – Workshop organization including preparation of the agenda, leading the discussions and serving as the workshop chairman.

NNSA-IAEC Topic Area V Workshop: Waste management and subsurface science. 9-10 November 2021 (virtual), Workshop organization including preparation of the agenda, leading the discussions.

Gabriela Bar-Nes – List of Publications

1. Articles in Peer Reviewed Journals

1.1. O. Aviam, **G. Bar-Nes**, Y. Zeiri, A. Sivan, "Accelerated Biodegradation of Cement by Sulfur-Oxidizing Bacteria as a Bioassay for Evaluating Immobilization of Low-Level Radioactive Waste", Applied and Environmental Microbiology, V.70(10), p. 6031-6036, (2004)

1.2. M. Fisher, **G. Bar-Nes**, Y. Zeiri, A. Sivan, "The Effect of Silica Fume on Biodegradation of Cement Paste and its Capacity to Immobilize Strontium During Exposure to Microbial Sulfur Oxidation", Biodegradation, 19, p.321-328 (2008)

1.3. **G. Bar-Nes**, A. Katz, Y. Peled, Y. Zeiri, "The mechanism of cesium immobilization in densified silica-fume blended cement pastes", Cement and Concrete Research, 38, p.667-674 (2008)

1.4. **G. Bar-Nes**, A. Katz, Y. Peled, Y. Zeiri, "The Combined Effect of Irradiation and Carbonation on the Immobilization of Sr and Cs ions in Cementitious Pastes", Materials and Structures, 41(9), 1563-1570 (2008)

1.5. **G. Bar-Nes**, R. Hall, V. Sharma, M. Gaborieau, D. Lucas, P. Castignolles, R.G. Gilbert, "Controlled/living radiacal polymerization of isoprene and butadiene in emulsion", European Polymer Journal, 45, p. 3149-3163 (2009)

1.6. **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 applications" Materials and Structures, 44(1), 291-297 (2011)

1.7. E. Ofer-Rozovsky, M. Arbel Haddad, **G. Bar-Nes**, A. Katz, The formation of crystalline phases in metakaoline-based geopolymers in the presence of sodium nitrate, Journal of Materials Science, 51(10), 4795-4814 (2016)

1.8. M. Arbel Haddad, E. Ofer-Rozovsky, **G. Bar-Nes**, E.J.C. Borojovich, A. Nikolski, D. Mogilianski, A. Katz, "Formation of zeolites in Metakaolin-based Geopolymers and their potential application for radioactive Cs immobilization", J. Nuclear Materials, 493, 168-179 (2017)

1.9. **G. Bar-Nes**, Y. Peled, Z. Shamish, A. Katz, "Cesium and Strontium immobilization in Portland cement pastes blended with pozzolanic additives", Journal of Nuclear Engineering and Radiation Science, 3(3): 030907-03907-05 doi: 10.1115/1.4035415 (2017)

1.10. **G. Bar-Nes**, O. Klein-BenDavid, L. Chomat, N. Mace, M. Arbel-Haddad, S. Poyet, "Sr immobilization in irradiated Portland cement exposed to carbonation", Cement and Concrete Research, 107, 152-162, (2018)

1.11. E. Ofer-Rozovsky, M. Arbel Haddad, **G. Bar-Nes**, E.J.C. Borojovich, A. Biniamini, A. Nikolski, A. Katz, "Cs immobilization in nitrate bearing matakaolin-based geopolymers", J. Nuclear Materials, 514, 247-254 (2019)

1.12. E. Boukobza, **G. Bar-Nes**, O. Klein-BenDavid, B. Carmeli, "Modeling of strontium leaching from carbonated Portland cement pastes using a simplified diffusion-kinetic analytical model", J. Applied Geochemistry, 100, 258-267 (2019)

1.13. E. Cohen, A. Peled, **G. Bar-Nes**, "Dolomite-based quarry-dust as a substitute for sly-ash geopolymers and cement pastes", J. Cleaner Production, 235, 910-919, (2019)

1.14. R. Haik, **G. Bar-Nes**, A. Peled, I. Meir, "Sustainable lime hemp concrete (LHC): Alternative unfired binders as lime replacement in hemp concrete", Construction and Building Materials, 241, 117981, (2020)

1.15. E. Ofer-Rozovsky, M. Arbel Haddad, **G. Bar-Nes**, A. Katz, "Alkali Activation of Fly Ash in the Presence of Sodium Nitrate", Waste and biomass valorization, http:/doi.org/10.1007/s12649-021-01584 (2021).

1.16. M. Shiner, O. Klein-BenDavid, E. L'Hopital, A. Dauzeres, M. Neji., N. Teutsch, A. Peled, **G. Bar-Nes**, "Retention of Sr in high and low-pH cementitious matrices – OPC vs. model systems", Cement and Concrete Research, 152, 106659, (2022)

1.17. H. Raveh-Amit, F. Lemont, **G. Bar-Nes**, O. Klein-BenDavid, N. Banano, S. Gelfer, P. Charvin, T. Bin Rozaini, F. Rousset, "Pyrolysis of high-density polyethylene over aluminosilicate catalysts: Implications towards industrial–scale treatment of solid organic waste contaminated with radionuclides", Accepted for publication in Catalysts, January 2022

2. <u>Articles in refereed conference proceedings/Book Chapters (since 2014)</u>

2.1. **G. Bar-Nes**, L. Chomat, N. Mace, C. Hossepied, M. Arbel-Haddad, S. Poyet, "Effects of carbonation, irradiation and temperature onto strontium immobilization into a cementitious matrix", 2nd international symposium on cement-based materials for nuclear wastes, NUWCEM2014, Avignon, France, 2-6 June 2014.

2.2. O. Klein-BenDavid, Y. Peled, D. Tavor, Z. Ohayon, P. Elias, **G. Bar-Nes.**, "Pyrolysis and gasification of HDPE in a batch reactor". Waste Management 2014, Ancona, Italy, May, 2014

2.3. E. Ofer-Rozovsky, E.J.C. Borojovich, A. Nikolski, A. Binyamini M. Arbel-Haddad, **G. Bar-Nes**, A. Katz, "Geopolymerization at moderate temperatures in the presence of nitrate anion", 2nd international symposium on cement-based materials for nuclear wastes, NUWCEM2014, 2-6th, Avignon, France, June 2014.

2.4. O. Klein-BenDavid, J.L. Branch, P. Zhang, **G. Bar-Nes**, M. Arbel-Haddad, R.C. Delapp, D.S. Kosson, "The retention of Cr in metakaolin-based geopolymeric materials under oxidation and carbonation", WM2017 Conference, March 5-7, 2017, Phoenix, Arizona, USA

2.5. H. Raveh Amit, N. Banano, **G. Bar-Nes**, M. Tsesarsky, "Bio-cementation for physic-mechanical soil improvement of capping layers in near-surface radioactive disposal sites", Sardinia 2017, Sixteenth International waste management and landfill symposium, 2-6 October 2017

2.6. H. Raveh Amit, O. Klein-BenDavid, G. Atlas, N. Banano, **G. Bar-Nes**, "Catalytic Pyrolysis of high density polyethylene over zeolites as a method for contaminated solid waste treatment", Sardinia 2017, Sixteenth International waste management and landfill symposium, 2-6 October 2017

2.7. S. Atlas, A. Kaplan, J.H. Baraban, O. Klein-BenDavid, H. Raveh-Amit, **G. Bar-Nes**, A. Raveh, "Experimental and modeling of low pressure plasma as a complementary process of thermal waste treatment". WM2019 conference, 3-7 March 2019, Phoenix, Arizona, USA, Number 19270

2.8. E. Cohen, A. Peled, **G. Bar-Nes**., "The chemical durability of cement pastes and geopolymers substituted with dolomite-based quarry-dust", International RILEM workshop on concrete durability and service life planning (ConcreteLife), Technion, January 2020, p.63-66

3. Patents

3.1. A. Soffer, G. Agam, **G. Bar-Nes**, D. Boxer, G. Dagan, J. Gilron, L. Kleiner, V. Krakov , "Recovery of Perfluorinated Compounds and Hydrofluorocarbon Gases Using Molecular Sieve Membranes" PCT/IL98/00030

4. Internal Publications

Author of over 70 propriety reports, NRCN.

5. Presentations at conferences/meetings (since 2014)

5.1. **G. Bar-Nes**, A. Dody, S. Turgeman, R. Hakmon, "Processing, storage and disposal of institutional waste in Israel: An overview of the operational experience and R&D projects", oral presentation for the technical meeting on processing and storage of institutional radioactive waste: operating experience and lessons learned", IAEA, Vienna, Austria, August 2014.

5.2. **G. Bar-Nes**, L. Chomat, N. Mace, C. Hossepied, M. Arbel-Haddad, S. Poyet, "Effects of carbonation, irradiation and temperature onto strontium immobilization into a cementitious matrix", 2nd international symposium on cement-based materials for nuclear wastes, NUWCEM2014, Avignon, France, 2-6 June 2014. Oral presentation

5.3. O. Klein-BenDavid, Y. Peled, D. Tavor, Z. Ohayon, P. Elias, **G. Bar-Nes**, "Pyrolysis and gasification of HDPE in a batch reactor". Waste Management 2014, Ancona, Italy, May, 2014

5.4. E. Ofer-Rozovsky, E.J.C. Borojovich, A. Nikolski, A. Binyamini M. Arbel-Haddad, **G. Bar-Nes**, A. Katz, "Geopolymerization at moderate temperatures in the presence of nitrate anion", 2nd international symposium on cement-based materials for nuclear wastes, NUWCEM2014, 2-6th, Avignon, France .June 2014.

5.5. O. Klein-BenDavid, Y. Peled, D. Tavor, Z. Ohayon, P. Elias, **G. Bar-Nes**,. (2014) Pyrolysis and gasification of HDPE in a batch reactor. the 28th annual symposium of the israeli section of the combustion institute, Tel Aviv, December, 2014.

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

5.7. **G. Bar-Nes,** Y. Peled, Z. Shamish, A. Katz, "Cesium and Strontium immobilization in Portland cement pastes blended with pozzolanic additives", The 28th Conference of the Nuclear societies in Israel, Tel Aviv, April 2016

5.8. E. Ofer-Rozovsky, M. Arbel Haddad, **G. Bar-Nes,** E.J.C. Borojovich, A. Nikolski, A. Katz, "Incorporation of Cs in fly-ash based geopolymers", The 28th Conference of the Nuclear societies in Israel, Tel Aviv, April 2016

5.9. **G. Bar-Nes**, M. Arbel-Haddad, O. Klein BenDavid, L. Chomat, N. Macé, C. Hossepied, S. Poyet, "Effects of carbonation, irradiation and temperature onto strontium immobilization into a cementitious matrix", IAEA annual meeting of LABONET network, 7-10 November 2016, Cadarache, France

5.10. E. Ofer-Rozovsky, M. Arbel Haddad, **G. Bar-Nes**, A. Katz, "Geopolymerization of alkali-activated metakaoline at moderate temperature in the presence of sodium nitrate", presented as a poster at the 4th international workshop on Mechanisms and modeling of Waste/Cement Interactions, Murten, Switzerland, April 2016.

5.11. M. Arbel Haddad, **G. Bar-Nes**, E.J.C. Borojovich, A. Nikolski, D. Lambertin, A. Dannoux-Papin, F. Frizon, "The effect of gamma radiation on crystalline and non-crystalline geopolymer matrices", presented as a poster at the 4th international workshop on Mechanisms and modeling of Waste/Cement Interactions, Murten, Switzerland, April 2016.

5.12. H. Raveh-Amit, N. Banano, **G. Bar-Nes**, M. Tsesarsky, (2018). Bio-cementation of desert soil using microbial induced calcite precipitation. The Annual Meeting of the Israel Society for Microbiology (ISM), July 3-4, Beer Sheva, Israel

5.13. H. Raveh-Amit, N. Banano, **G. Bar-Nes**, M. Tsesarsky, (2018). Soil Improvement for Capping Layers of Near-Surface Radioactive Disposal Sites using Microbial Induced Calcite Precipitation. The 29th Conference of the Nuclear Societies in Israel, May 8-10, Herzliya, Israel

5.14. H. Raveh-Amit, O. Klein-BenDavid, N. Banano, G. Atlas, **G. Bar-Nes**. (2018). Decomposition of Organic Waste Contaminated with Radionuclides: Role of Catalysts and Reaction Temperature. The 29th Conference of the Nuclear Societies in Israel, May 8-10, Herzliya, Israel

5.15. H. Raveh-Amit, O. Klein-BenDavid, N. Banano, G. Atlas, **G. Bar-Nes**. (2018). Optimising the Pyrolysis of PE and HDPE for Contaminated Solid Waste Treatment. The 2018 Waste Management Symposia, March 18-22, Phoenix, AZ, USA

5.16. H. Raveh-Amit, N. Banano, **G. Bar-Nes**, M. Tsesarsky, (2018). Bio-cementation of capping layers in near-surface radioactive disposal sites using microbial induced calcite precipitation. The 18th Israel Materials Engineering Conference (IMEC), February 6-8, the Dead Sea, Israel

5.17. M. Cahana, A. Peled, **G. Bar-Nes.**, "Fiber reinforced geopolymers-mechanical performance", The 18th Israel Materials Engineering Conference (IMEC), February 6-8, the Dead Sea, Israel

5.18. M. Shiner, O. Klein-BenDavid, E. L'Hopital, A. Dauzeres, A. Peled, **G. Bar Nes**. "strontium retention in ordinary Portland cement, low pH cement and model compounds" NUWCEM, October 2018, Avignon, France.

5.19. O. Klein-BenDavid, J. Branch, P. Zhang, **G. Bar-Nes**, M. Arbel-Hadad, R. Delapp, D. Kosson, "retention of metakaolin based geopolymer in the presence of an organic reductant – an experimental study. NUWCEM, October 2018, Avignon, France.

5.20. O. Klein-BenDavid, J. Branch, P. Zhang, **G. Bar-Nes**, M. Arbel-Hadad, R. Delapp, D. Kosson, "retention of metakaolin based gopolymer in the presence of an organic reductent – an experimental study. International conference of alkali activated materials and geopolymers, June 2018, Tomar, Portugal.

5.21. D. Gabber, **G. Bar-Nes**, A. Dody, A. Peled, "Metakaolin based geopolymers as soil stabilizers", . International conference of alkali activated materials and geopolymers, June 2018, Tomar, Portugal.

5.22. M. Cahana, **G. Bar-Nes**, A. Peled, "Different fiber materials as reinforcement for geopolymer composites", International conference of alkali activated materials and geopolymers, June 2018, Tomar, Portugal.

5.23. M. Shiner, O. Klein-BenDavid, E. L'Hopital, A. Dauzeres, A. Peled, **G. Bar-Nes**. "strontium retention in ordinary Portland cement, low pH cement and model compounds" The Israeli Nuclear societies annual conference, April 2018, Herzelia.

5.24. O. Klein-BenDavid, J. Branch, P. Zhang, **G. Bar-Nes**, M. Arbel-Hadad, R. Delapp, D. Kosson, "retention of metakaolin based gopolymer in the presence of

an organic reductant – an experimental study. The Israeli Nuclear societies annual conference, April 2018, Herzelia.

5.25. M. Shiner, O. Klein-BenDavid, E. L'Hopital, A. Dauzeres, A. Peled, **G. Bar-Nes**."strontium retention in ordinary Portland cement, low pH cement and model compounds" Annual meeting of the Israeli geological society, March2018, Cyprus.

5.26. S. Atlas, A. Kaplan, O. Klein-BenDavid, H. Raveh-Amit, N. Banano, A. Ben Shabat, **G. Bar-Nes**, A. Raveh, "Low pressure plasma as a complementary process for thermal waste treatment" The 20th Israeli conference of plasma science and its applications, January, 2018

5.27. H. Raveh-Amit, N. Banano, O. Klein-BenDavid, **G. Bar-Nes**. (2019). Decomposition of Polymers over Various Aluminosilicate Catalysts.the 47th Annual Meeting of the Israel Polymers and Plastics Society, January 15, 2019, Ramat Gan, Israel

5.28. H. Raveh-Amit, N. Banano, O. Klein-BenDavid, **G. Bar-Nes**. (2019). Pyrolytic Decomposition of Polymers over Various Aluminosilicate Catalysts. The 22nd Annual Meeting of the IsrAnalytica Conference. January 22-23, 2019. Tel-Aviv, Israel

5.29. S. Atlas, A. Kaplan, J.H. Baraban, H. Raveh-Amit, **G. Bar-Nes**, A. Raveh, Experimental and modeling of low-pressure plasma as a complimentary process of thermal waste treatment. WM2019 Conference, March 3-7, 2019, Phoenix, Arizona, USA (poster)

5.30. H. Raveh-Amit, O. Klein-BenDavid, N. Banano, S. Gelfer, A. Nikolski, **G. Bar-Nes**, M. Tsesarsky, (2019). Bioremediation using Soil Indigenous Ureolytic Bacteria. The 17th International Conference on the Chemistry and Migration Behavior of Actinides and Fission Products in the Geosphere. September 15-20, 2019, Kyoto, Japan

5.31. H. Raveh-Amit, O. Klein-BenDavid, N. Banano, S. Gelfer, A. Nikolski, **G. Bar-Nes**, M. Tsesarsky, (2019). Bioremediation using Soil Indigenous Ureolytic Bacteria. The 5th Conference of the Israel Society for Biotechnology Engineering (ISBE), December 22, 2019, Tel-Aviv, Israel

5.32. Y. Harnik, O. Klein-BenDavid, M. Arbel Hadad, N. Teutsch, **G. Bar-Nes**. "Immobilization of Low-Level Waste Containing Nitrate in Geopolymeric Systems". Mechanisms and Modelling of Waste/Cement Interactions, March 2019, Karlsruhe, Germany.

5.33. E. Boukobza, **G. Bar-Nes**, O. Klein-BenDavid, B. Carmeli, "Modeling of strontium leaching from carbonated Portland cement pastes using a simplified diffusion-kinetic analytical model", Mechanisms and Modelling of Waste/Cement Interactions, March 2019, Karlsruhe, Germany.

5.34. C. Gruber, M. Steen, K.G. Brown, R. Delapp, E.N. Matteo, O. Klein-BenDavid, **G. Bar-Nes**, J.C.L. Meeussen, D.S. Kosson, "Cementitious materials aging in carbonate rock/cement-paste interfaces with implications for deep

geological disposal sites", Mechanisms and Modelling of Waste/Cement Interactions, March 2019, Karlsruhe, Germany.

5.35. H. Raveh-Amit, N. Banano, O. Klein-BenDavid, **G. Bar-Nes**, (2019). Decomposition of Polymers over Various Aluminosilicate Catalysts.the 47th Annual Meeting of the Israel Polymers and Plastics Society, January 15, 2019, Ramat Gan, Israel

5.36. H. Raveh-Amit, O. Klein-BenDavid, N. Banano, S. Gelfer, A. Nikolski, **G. Bar-Nes**, M. Tsesarsky, (2019). Bioremediation using Soil Indigenous Ureolytic Bacteria. The 17th International Conference on the Chemistry and Migration Behavior of Actinides and Fission Products in the Geosphere. September 15-20, 2019, Kyoto, Japan

5.37. M.E. Shiner, O. Klein-BenDavid, E. L'Hopital, A. Dauzeres, M. Neji, N. Teutsch, A. Peled, **G. Bar-Nes**. "Retention of Na, Si, K Ca and Sr in high and low-pH cementitious ,matrices – Portland cement vs. model systems. Israel geological society and EYAL conference, Judea Mountains, 2020.

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