

פרק 6: גבריאלה בר-נס – רשימת פרסומים גלויים

1. Articles in Peer Reviewed Journals –

לפני הדרגה הנוכחית:

- 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 radical 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)

לאחר קבלת הדרגה הנוכחית

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- 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. Articles in refereed conference proceedings/Book Chapters (since 2014)

- 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 (before 2014)

- 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). Biocementation 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, March 2018, 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.
- 5.38. Raveh-Amit H, Bar-Nes G, Klein-BenDavid O, Banano N, Gelfer S, Charvin P, Bin Rozaini T, Rousset F, Lemont F. Pyrolysis of High-Density polyethylene over various aluminosilicate zeolites for flammable gases production, WasteEng 2020, July 13-16, Guelph, Canada.
- 5.39. M.E. Shiner, O. Klein-BenDavid, M. Neji, Y. Harnik, N. Teutsch, Peled, A. and **G. Bar-Nes**. " Sr immobilization in high and low-pH cementitious systems – controlling phases and mechanisms",NUWCEM 2021 – International Symposium on Cement-Based Materials for Nuclear Wastes, France, Avignon, September 2021
- 5.40. M.E. Shiner, L. Hooper, J. Goldblatt, O. Klein-BenDavid, A. Dauzeres, Neji M., Teutsch N., Peled, A. and **G. Bar-Nes**. "Sorption and retention of Sr and Cs in high and low-pH cementitious pastes", Israel Geological Society, 2021 annual meeting, April, Yeruham, Israel
- 5.41. Jonathan Goldblatt, Matan E. Shiner, Ofra Klein-BenDavid, Gabriela Bar-Nes, Alva Peled. Sorption of Cesium in high-and low-pH cementitious pastes. Israel Geological Society annual conference 2021, May 2021, Yeruham, Israel.
- 5.42. R. Willson-Levy, A. Peled, O. Klein-BenDavid, **G. Bar-Nes**, "Waste to resource – sustainable one-part geopolymer development from industrial waste", Israel Geological Society, 2021 annual meeting, April, Yeruham, Israel
- 5.43. I. Dagan, E. Cohen, A. Peled, **G. Bar-Nes**, "Development of sustainable building materials based on industrial waste and quarrying materials", Israel Geological Society, 2021 annual meeting, April, Yeruham, Israel
- 5.44. I. Dagan, A. Peled, **G. Bar-Nes**, "Development of sustainable alternative building materials based on oil shale ash", The 11th ACI/RILEM International Conference on Cementitious Materials and Alternative Binders for Sustainable Concrete", ICCM2021 online, June 7-10, 2021
- 5.45. Raveh-Amit H, Harnik Y, Banano N, Bar-Nes G. Containment of radioactively-contaminated soil: from differences in matrix composition to the performance of a remediation technique. The 19th Israel Materials Engineering Conference, to be held in Tel-Aviv, December 13-14 2021.