

CURRICULUM VITAE

1. PERSONAL DETAILS

Name	Frage Naum
Date of birth:	06. 01.1947
Country of birth	USSR, Zlatoust
Address	Ben David Yoseph 6, Beer-Sheva
Telephone	08-6495330 (h), 08-6461468 (w)
Marital status:	married +2
Date of repatriation	June 10, 1993

2. EDUCATION

1970. M. Sc. in Electrometallurgy of Steels, Chelyabinsk Polytechnic Institute.
1974. Ph.D. in Electrometallurgy of Steels. Siberian Institute of Metallurgy, Novokuznetsk. "Interaction of titanium nitride with liquid metals and oxides" Advisor Prof. Gurevich Yu. G.
1989. D.Sc. (Dr. Hab.) in Powder Metallurgy and Composite Materials. Institute of Materials Science, Ukrainian Academy of Sc., Kiev. " High Temperature Interaction of the Titanium Based Refractory Compounds (TiN, TiC_x, TiC_xN_y) with Metal and Oxide Systems and Ceramic Matrix and Metal Matrix Composites".

3. EMPLOYMENT HISTORY

Since 2018 Prof. Emeritus

- 10.2010 Head of the Department of Materials Engineering,
10.2016 Ben-Gurion University of the Negev
- 04.2008- Full Professor, Department of Materials Engineering
09.2010 Ben-Gurion University of the Negev
- 10.2000- Associate Professor, Department of Materials Engineering,
10.2005 Ben-Gurion University of the Negev
- 10.1997- Visiting Professor, Department of Materials Engineering,
10.2000 Ben-Gurion University of the Negev
- 1994-1997 Investigator, Department of Materials Engineering,
Ben-Gurion University of the Negev
- 1983-1993 Head of Dept. of Metallurgy, Chelyabinsk Technical University
- Since 1990 Professor of Metallurgy, Chelyabinsk Technical University
- 1974-1983 Associate Professor, Machine Building Institute, Kurgan
- 1970-1974 Assistant, Dept. of Metallurgy, Chelyabinsk, Polytechnic Institute

4. EDUCATIONAL ACTIVITIES

4.1. COURSES TAUGHT

1. Processes (Undergraduate level)

2. Ceramic Materials (Undergraduate level)
3. Structure and Properties of Advanced Ceramics (Graduate level)
4. Thermodynamics of Multicomponent Solutions and their Application to the Analysis of Phase Equilibrium in Systems of Practical Importance (Graduate level)
5. Surface Engineering at Elevated Temperature (Graduate level)

4.2. RESEARCH STUDENTS

More than 15 completed Ph. D. studies and more than 30 students completed M.Sc. studies under my supervision

5. OTHER DUTIES AND ACTIVITIES

5.1 Referee of scientific foundations:

5.1.1. United States - Israel Binational Science Foundation.

5.1.2. German-Israel Foundation for Scientific Research and Development.

5.2. Israel Science Foundation

5.3 Member of International advisory board of the International Journal "Metallurgy and New Materials Research"

5.4 Member of International advisory board of the International Journal "Ceramic international"

6. HONORS AND AWARDS

1. First Prize for Young Scientist of Machine Building Institute, Kurgan, 1976
2. First Prize for Young Scientist of Machine Building Institute, Kurgan, 1978
3. Excellence in Higher Education of USSR, 1987.
4. Received medal "Inventor of USSR" Governmental Committee of Discoveries and Inventions, former USSR, 1985.
5. Medal in recognition of the role-played in the development of the Carbide-Steel Composites. Issued by National Exhibition Com., former USSR, 1990.

7. FIELDS OF SCIENTIFIC EXPERIENCE

1. Metal-matrix (MMC) and ceramic matrix (CMC) composites. Processing, microstructure and properties. Methods: infiltration of porous ceramic bodies with liquid metals, liquid phase sintering, reaction bonding
2. Wetting and interface interactions: metal/ceramic systems.
3. Fabrication, properties and applications of the transparent polycrystalline ceramics
4. Thermodynamic analysis of the multicomponent and multiphase systems based on ceramic phases (carbides, nitrides, oxides) and metallic solutions.

8. LIST OF PUBLICATIONS

8.1. Books

1. N. Frage and Yu. Gurevich, "Quality of Metals" Chelyabinsk, Metallurgy, 168 p. 1977.
2. Yu. Gurevich, N. Narva, N. Frage, "Carbide-Steels" Metallurgy, Moscow, 144p., 1988
3. Yu. Gurevich, N. Germanuk, N. Frage, "Alloying of Iron through chlorine phase." Ac. Nauk, Sverdlovsk, 190p. 1992

8.2. More than 250 publications. The list of publications for 5 last years (2018-2023) are presented below

1. Jonathan Motty; Barak Ratzker; Sergey Kalabukhov; Bar Favelukis; Shmuel Hayun; Nachum Frage, Effect of Mn doping on the densification and properties of transparent alumina by high-pressure spark plasma sintering
Ceramics International 2023-09 DOI: [10.1016/j.ceramint.2023.06.092](https://doi.org/10.1016/j.ceramint.2023.06.092)
2. Barak Ratzker; Avital Wagner; Sergey Kalabukhov; Natalya Froumin; Nachum Frage The role of high pressure in preventing carbon contamination of transparent ceramics during spark plasma sintering
Scripta Materialia 2023-03 DOI: [10.1016/j.scriptamat.2022.115252](https://doi.org/10.1016/j.scriptamat.2022.115252)
3. E. B. Zaretsky; N. Frage; S. Kalabukhov
Impact response of germanium over 300–1143 K temperature range
Journal of Applied Physics 2022-12-14 DOI: [10.1063/5.0119423](https://doi.org/10.1063/5.0119423)
4. Barak Ratzker; Avital Wagner; Sergey Kalabukhov; Nachum Frage
Controlled pore growth for enhanced photoluminescence of ceramic phosphors
Scripta Materialia 2021-09 DOI: [10.1016/j.scriptamat.2021.114008](https://doi.org/10.1016/j.scriptamat.2021.114008)
5. Barak Ratzker; Avital Wagner; Sergey Kalabukhov; Nachum Frage
Transparent Er₂O₃ ceramics fabricated by high-pressure spark plasma sintering,
Journal of the European Ceramic Society 2020-10
DOI: [10.1016/j.jeurceramsoc.2020.05.056](https://doi.org/10.1016/j.jeurceramsoc.2020.05.056)
6. Avital Wagner; Barak Ratzker; Sergey Kalabukhov; Ehud Galun; Moshe P. Dariel; Nachum Frage, Photoluminescence of Doped YAG Transparent Ceramics Fabricated by Spark Plasma Sintering Israel Journal of Chemistry 2020-05
DOI: [10.1002/ijch.201900131](https://doi.org/10.1002/ijch.201900131)
7. G. Hillel; L. Meshi; S. Kalabukhov; N. Frage; E.B. Zaretsky, Shock wave characterization of precipitate strengthening of PH 13–8 Mo stainless steel
Acta Materialia, 2020-04 DOI: [10.1016/j.actamat.2020.01.050](https://doi.org/10.1016/j.actamat.2020.01.050)
8. Mathieu Dutto; Dominique Goeuriot; Sébastien Saunier; Sergio Sao-Joao; Sylvain Marinel; Nachum Frage; Shmuel Hayun, The effect of microwave heating on the microstructure and the mechanical properties of reaction-bonded boron carbide, International Journal of Applied Ceramic Technology, 2020-03
DOI: [10.1111/ijac.13379](https://doi.org/10.1111/ijac.13379)
9. Barak Ratzker; Avital Wagner; Maxim Sokol; Louisa Meshi; Sergey Kalabukhov; Nachum Frage Deformation in nanocrystalline ceramics: A microstructural study of MgAl₂O₄ Acta Materialia, 2020-01
DOI: [10.1016/j.actamat.2019.11.015](https://doi.org/10.1016/j.actamat.2019.11.015)
10. Barak Ratzker; Avital Wagner; Maxim Sokol; Sergey Kalabukhov; Moshe P. Dariel; Nachum Frage, Optical and mechanical properties of transparent alumina fabricated by high-pressure spark plasma sintering
Journal of the European Ceramic Society 2019-07
DOI: [10.1016/j.jeurceramsoc.2019.03.025](https://doi.org/10.1016/j.jeurceramsoc.2019.03.025)
11. Mathieu Dutto; Dominique Goeuriot; Sébastien Saunier; Sylvain Marinel; Nachum Frage; Shmuel Hayun, Reaction-bonded B₄C/SiC composites synthesized by microwave heating, International Journal of Applied Ceramic Technology 2019-07 DOI: [10.1111/ijac.13211](https://doi.org/10.1111/ijac.13211)
12. Avital Wagner; Barak Ratzker; Sergey Kalabukhov; Maxim Sokol; Nachum Frage Residual porosity and optical properties of spark plasma sintered transparent polycrystalline cerium-doped YAG, Journal of the European Ceramic Society 2019-04 DOI: [10.1016/j.jeurceramsoc.2018.11.006](https://doi.org/10.1016/j.jeurceramsoc.2018.11.006)

13. Barak Ratzker; Avital Wagner; Maxim Sokol; Sergey Kalabukhov; Nachum Frage Stress-enhanced dynamic grain growth during high-pressure spark plasma sintering of alumina Acta Materialia 2019-02 DOI: [10.1016/j.actamat.2018.11.001](https://doi.org/10.1016/j.actamat.2018.11.001)
14. Hayun, S.; Ionash, E.; Kalabukhov, S.; Frage, N.; Zaretsky, E. Strength of ceramic–metal joints measured in planar impact experiments Journal of Materials Science 2018 DOI: [10.1007/s10853-018-2151-5](https://doi.org/10.1007/s10853-018-2151-5)
15. Levy, A.; Miriyev, A.; Sridharan, N.; Han, T.; Tuval, E.; Babu, S.S.; Dapino, M.J.; Frage, N. Ultrasonic additive manufacturing of steel: Method, post-processing treatments and properties Journal of Materials Processing Technology 2018 DOI: [10.1016/j.jmatprotec.2018.02.001](https://doi.org/10.1016/j.jmatprotec.2018.02.001)
16. Naor Elad Uzan; Roni Shneck; Ori Yeheskel; Nachum Frage, High-temperature mechanical properties of AlSi10Mg specimens fabricated by additive manufacturing using selective laser melting technologies (AM-SLM) Additive Manufacturing 2018-12 DOI: [10.1016/j.addma.2018.09.033](https://doi.org/10.1016/j.addma.2018.09.033)
17. Maxim Sokol; Barak Ratzker; Sergey Kalabukhov; Moshe Peter Dariel; Ehud Galun; Nachum Frage Transparent Polycrystalline Magnesium Aluminate Spinel Fabricated by Spark Plasma Sintering Advanced Materials 2018-10 DOI: [10.1002/adma.201706283](https://doi.org/10.1002/adma.201706283)