

ALEXANDER COHEN

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PERSONAL INFORMATION

- Date and Place of Birth: 5.3.1936 Mezritz, Poland
- Date of immigration: 1.3.1949
- Address: 27 Mivtsa Danny St. Beer Sheva 84456
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EDUCATION

- 1955 - 1959: BSc. in Chemistry, Technion, the Israel Institute of Technology, Haifa, Israel.
- 1983: PhD in Chemistry, The Weizmann Institute of Science, Rehovot, Israel. Advisors: The late Prof. F. Klein of the Weizmann Institute and Prof. R. Pauncz. Thesis: Phase space Calculations of Cross Sections of Gaseous Ion Molecule Reactions.
- 1983: Summer School in Crystal Growth, Davos, Switzerland.
- 1970: Summer School in quantum Chemistry, Physics and Biology, University of Uppsala, Sweden.

INTERESTS AND ACTIVITIES

Crystal and Crystalline fiber growth, High Temperature oxides, Laser Heated Crystal Growth, Thin films (Laser Ablation Techniques), High Temperature Superconductors, Transparent ceramics for Protection and Lasers.

- Fiber Growth Research and Start-up for the production of Ti:Sapphire laser rods.

GRANTS

- 2006 - Ministry of Defense (Mafat), Tranparent, Ceramic Nd:YAG for lasers.
- 2006 - Ministry of defense (Infrastructure) Ceramic YAG Technology
- 2005 – 2006: Ministry of Industry and Commerce, "Magnetron" Single Crystal doped Fibers ...
- 2002 – 2005: Ministry of Defense: The development and production of Nd:YAG rods,
- 2000 – 2004: BMBF. A. Cohen and. A. Tuennermann (Univ. Jena): Ultrashort-pulse lasers and amplifiers based on diode pumped fiber laser crystals.
- 1998 – 2002: Ministry of Commerce and Industry. A. Cohen:: The development of a fabrication facility for the production of Ti:Sapphire rods.
- 1995 – 1999 GIF A. Cohen and H. Opower (DLR, Stuttgart) (in the

category of collaboration with industry: Crystal Growth of Ti:Sapphire in Slab, Rod and Fiber form.

- 1994 – 1997 Ministry of Science and the Arts, First prize.. A. Cohen and J. Golub from the Hebrew University: Active Ti:Sapphire Waveguides for Integrated Optics.
- 1991 – 1994 Ministry of Science and Technology: A. Cohen: Growth and Characterization of Ti:Sapphire.

LANGUAGES

Hebrew, English, German and French.

WORK EXPERIENCE

- 2007 - 2012: New crystalline fiber materials and new configuration in preparation of collaborating with the laser department of the University of Stuttgart.
- 2006 - A new research of transparent ceramics for protective windows and laser material funded both by Mafat and Mafat – Tashtiot. Very promising results.
- 2005 – 2006: Single Crystal Doped Fibers in Collaboration with Elop, funded by Elop and the Ministry of Industry and Commerce ("Magnetron"). The success of this project leads to further 4 collaborative projects.
- 2002 – 2005: The Growth of Laser Crystals, funded by the Ministry of Defense.
- 2000 – 2004: Collaboration with Prof. Tuennermann from Jena University for researching High power Crystalline Fiber Amplifiers within the framework of GILCULT (German Israeli Collaboration of Ultra High Laser Technology).
- 1998 – 2002: AC Crystals, Industrial Park Rotem. Heading a Start-up company for the production of high quality Ti:Sapphire rods for tunable lasers. Funded by the chief scientist of the ministry of Commerce and Industry.
- 1994 – 2000: The Institutes for Applied Research, BGU: Fiber growth of Ti:Sapphire and pure Sapphire by means of the Laser Pedestal Growth method as part of a GIF project.
- 1991 – 2001: Crystal Growth Div., NRCN: Research in the various aspects of Growth and Characterization of Ti:Sapphire as a medium of solid-state tunable lasers.
- 1988 – 1991: Institute for Technical Physics, German Aerospace Research Establishment (DLR), Stuttgart: Established on behalf of the Weizmann Institute, the Materials activity in the Laser Institute. This included Laser Heated Crystal Growth, High Temperature Superconductors, Laser Ablation and Laser Heated Fiber Growth.
- 1985 – 1987: SERI (Solar Energy Research Institute now NREL),

Golden Colorado: Sabbatical leave. Growth and Characterization of Ternary III – V crystals which could serve as lattice matched substrates for compound solar cells.

- 1982 – 1985 Crystal Growth Division, NRCN. Senior scientist doing research in Nd:YAG, MCT and GaAs.
- 1978 – 1982 NRCN: Research in various fields of Chemical Technology.
- 1968 – 1979 NRCN: Established and managed the Mass spectrometry lab. Research included Isotopic ratios measurements, trace analysis, automation of Mass spectrometry, Designed and Built Instrumentation related to Mass Spectrometry, did theoretical Calculations of Ion Molecule reaction in the gas phase.
- 1967 – 1968 French Atomic energy Commission, Nuclear Research center of Saclay, France: Did Research in Mass spectrometry.
- 1962 – 1967 NRCN: Participated in establishing the Optical Spectrographic lab. and the Development of Analytical methods.
- 1960 – 1961 Belgian Atomic Energy Commission, Nuclear Research Center of Mol, Belgium: Did Research in Spectrography and Mass spectrometry.
- 1961 – 1961 National Physical Laboratory, Teddington, UK: Optical Spectrography.
- 1961 1962 The Physics laboratory, University of Utrecht, Holland: did research in Flame Photometry.

RELEVANT PATENTS AND PUBLICATIONS

1. A. Cohen and T.F.Ziszek, bulk Crystal Growth of Lattice-Matched III – V Ternary Alloy Substrates for High Efficiency, Multijunction solar Cells, in Annual Report FY 1986, SERI/PR-212-3140, DE87001163, pp 42-47.
2. A. Cohen, T.F. Ciszek, J.S. frye, G.E. Maciel and Alex Zunger, Bulk Growth and Ordering of $Ga_xIn_{1-x}As$, presented at the Annual Meeting of the Electrochemical society, Honolulu, Hawaii, October 18-23,1987.
3. A. Cohen and P. Allenspacher , Bulk Growth of single Crystal $YbaCuO$ and its Characterization, Presented at the VDI meeting in Karlsruhe 1989.
4. A. Cohen, U. Brauch, J. Muckenschnabel and H. Opower, „High Power Laser Float Zone Crystal Growth“, SPIE Vol. 1276, CO_2 -Lasers and Applications II, 1990,pp 323-329.
5. J. Muckenschnabel, U. Brauch, H. v. Buelow, A. Cohen and E. Zeyfang, „Einsatz von CO -Laserstrhlung zur Zuechtung von Kristallen“, Laser und Optoelektronik, 23. Jahrgang, Nr. 1,49(1991)
6. A. Cohen, P. Allenspacher and H. Opower, Single Crystal

growth of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$, in Proceedings of the ICMC'90, Topical Conference on Materials Aspects of High Temperature Superconductors, Vol. 1, DGM Informationgesellschaft, Verlag, 1991, 341-346.

7. A. Cohen, P. Allenspacher, M. Brieger, I. Jehck and H. Opower, thin Film YBaCuO grown by the Laser Ablation Technique, in Proceedings of the ICMC'90, Topical Conference on Materials aspects of High Temperature superconductors, Vol 1, DGM Informationgesellschaft, Verlag, 1991, 479-482.
8. A. Cohen, P. Allenspacher, M. Brieger, I. Jeuck and H. Opower, Beam Target Interaction during growth of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ by the Laser Ablation Technique, To appear in Oct, 1991 in Appl. Phys. Lett..
9. A. Cohen, P. Allenspacher, I. Jeuck, and H. Opower, The Plume Mechanism of the Laser ablation of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$, submitted for Publication in the J. Appl. Phys.
10. J. Muckenschnabel, U. Brauch, H. v. Buelow, A. Cohen und W. Zeyfang „einsatz zur Zuechtung von Kristallen“, TECLAS-Kolloquium Stuttgart 1990.
11. A. Cohen, U. Brauch, J. Muckenschnabel and H. Opower: „Laser Float Zone Crystal Growth of High Temperature Oxides” Presented at the Third Workshop on Passive Infrared Optical Materials and Coatings, NATO Headquarters, Brussels, Belgium, 27-30th March 1990, Report to AC/243 (Panel III, RSG2), 10, 1-15.
12. U. Brauch, A. Cohen and J. Muckenschnabel: „Laser Float Zone Crystal Growth“, Seminarvortrag an der Univesitaet Saragossa, Spanien, 1990.
13. U. Brauch, U. Becker, A. Cohen, J. Muckenschnabel and H. Opower: „Investigation of the Optical Properties of High-Temperature Melts with the FEL at Darmstadt”, vorgetragen beim 4th European Workshop on Free electron Lasers, Darmstadt, 1991.
14. I. Jeuck, P. Allenspacher, M. Brieger, A. Cohen: Laserunterstuetzte Herstellung duenner Schechten, TECLAS-Laserkolloquium, Stuttgart, Stuttgart 1990.
15. P. Allenspacher, M. Brieger, A. Cohen, I. Jeuck, and M. Klose, Laserablation und Duenschichttechnologie – Praezisionsschichten, in Statusbericht 1991, Insitut fuer Technische Physik, DLR, Juli 1991, pp 51-54.
16. U. Becker, U. Brauch, A. Cohen, and J. Muckenschnabel, Kristallzuechtung, in Statusbericht 1991, Institut fuer Technische Physik. DLR, July 1991, pp 59 – 65.
17. J. Muckenschnabel, U. Becker, U. Brauch, and A. Cohen, Float Zone Crystal Growth Using Laser Radiatio, DLR

Forschungsbericht, DLR – FB 93-10, 1993.

18. A. Cohen, S. Biderman, M.P. Dariel, a. Horowitz, M Nahmani, M. Weiss, and a. BenAmar, Growth and Characterization of Ti:Sapphire, Presented at the Annual Meeting of the Israel Physical Society, 1993.
19. A. BenAmar, J. kagan. M. Lando, E. Meiron, and A. Cohen, M. Nahmani, Efficient Copper Vapor Laser Pumped Ti:Sapphire Laser, Presented at the Annual Meeting of the Israel Physical Society, 1993.
20. A. Cohen, Growth and Characterization of Ti:Sapphire Crystals, Presented at the Materials Colloquium of the Weizmann Institute, June, 1993.
21. A. Cohen, Ti:Sapphire Production, Presented at the Joint laser Colloquium of the University of Stuttgart and the DLR, Aug. 1993.
22. A. Cohen, and U. Laor, High Quality Material for Green Laser Diodes, Presented at the Joint Laser Colloquium of the University of Stuttgart and the DLR, Aug. 1993.