CURRICULUM VITAE

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Dr. Mohamad Akel (Director of research)

Plasma division, physics Dept. at Atomic Energy Commission of Syria
Google Scholar

Plasma physics and its applications, fusion energy

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Mohamad Akel, ORCID: https://orcid.org/0000-0002-0590-7758

- ✓ **Supervisor of many MSc and PhD students in the plasma physics and its applications.**
- ✓ **Reviewer for many international scientific journals.**
- ✓ **International research collaborations and workshops with plasma focus Labs. (IAEA (CRP F43024), PF1000, PF24, UM PF, NX2 PF, etc..) for studying of the plasma focus and its applications (X-Ray, neutrons, high energy electron and ion beams, nano-structured thin films, surface modification and etc..).**
- ✓ **Numerical experiments and simulation on plasma focus using Lee model code**
- ✓ **Member of the international Scientific Committee for Dense Magnetized Plasmas (ISC-DMP), Hery 23, P.O. Box 49, 00-908 Warsaw, Poland.**
- ✓ **Experience in diagnostics such as current, voltage, magnetic field probes, X-ray yield using BPX65 PIN photodiode spectrometry, X-ray ratio method, FC measurements for ions and electrons, spectroscopy of hard and soft X-rays.**
- ✓ **Experience to integrate the Lee model code with experimental measurements and to modify the Lee code to resolve new experimental situations (e.g. to different gases, doped gases, and to include calculations of electron beams characteristics).**

PERSONAL DATA:

Surname: **Akel**
First name: **Mohamad**
Middle name(s): **Younes**
Place of birth (City and Country): **Latakia - Syria**
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EDUCATION (higher degrees)

University or equivalent Name and place	Years attended from	to	Major Fields of study	Degrees
Moscow Engineering Physics Institute (State University) (MEPhI) (Moscow – Russia)	1998	2000	Beam Plasma discharge	**M.Sc.**
MEPhI	2000	2004	Electromagnetic Oscillations During Unstable Plasma Surface Interaction	**Ph.D**

SCIENTIFIC EMPLOYMENT AND ACADEMIC RESPONSIBILITY

Research Institute or University Name and place	Period of duty from	to	Academic responsibilities
Atomic Energy Commission of Syria,			
Physics Department, Plasma Division	2005	2009	Researcher
Physics Department, Plasma Division	2009	2014	Main Researcher
Physics Department, Plasma Division	**2015**	**present**	**Director of Research**

LANGUAGES:

English and Russian

FIELDS OF INTEREST

Plasma physics and its applications
Medical applications of plasma
Physics of Controlled Fusion
Physics in Industry
Fusion Energy

Teaching Interests

1. General physics
2. Medical physics
3. Plasma physics and its applications
4. Physics of high energy particles, X-ray and neutron emissions
5. Physics for Engineering

SCIENTIFIC PUBLICATIONS

1. L. Marciniak, K. Rezac, J. Novotny, P. Kubes, J. Kravarik, D. Klir, J. Cikhardt,B. Cikhardtova, **M. Akel**

   D-D fusion neutron emission and plasma compression in a small-sized plasma focus operating with D_2 and D_2+Ar gas mixtures,
   https://doi.org/10.1088/1361-6587/ae7f4d

2. Bassam Abdallah, **Mohamad Akel**
   Effect of hydrogen RF plasma on the PbS thin film properties prepared by chemical bath deposition
   Materials Chemistry and Physics, Volume 356, 132307, (2026)
3. R. Albahri, Y. Abou-Ali, **M. Akel**
   Numerical study for prediction of neon soft X-ray yield emitted from the

plasma focus devices using the Lee model code for different anode shapes
Plasma Physics Reports, 51 (4), 484-495 (2025)

4. R. Albahri, Y. Abou-Ali, **M. Akel**
Effect of the gas pressure, charging voltage, and anode length on the neon soft X-ray emission from plasma foci - measurements and simulation
Contribution to Plasma Physics, 65 (5), e70003 (2025)
5. M. I. Nayeem, S. Biswas, M. K. Islam, **M. Akel**, S. Lee and M. A. Malek
Neutron Yield Optimization from a Palm Top Plasma Focus Device Using Lee Code
IEEE Transactions on Plasma Science, 53, 2, 293-300 (2025).
6. A. Altarabulsi, Y. Abou-Ali, S. Alsheikh Salo, **M. Akel**, S. Lee
Deuteron beam fluence emitted from dense plasma focus: Comparative investigation and simulation
Journal of Applied Research and Technology 22, 567-578 (2024)
7. L. Marciniak, A. Kulinska, M. Scholz, **M. Akel**, S. Lee, S. H. Saw
Total neutron emission from deuteron fusion and plasma pinch compression in a medium-sized plasma focus operating with D_2 and D_2+Ne gas mixtures – experimental results
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8. M. Ahmad, **M. Akel**, Sh. Al-Hawat
Sn/Pb ratio variation in spherical structures deposited on silicon surface using plasma focus
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9. S. Wahbe, Y. Abou-Ali, **M. Akel**, S. Lee and L. Marciniak
Numerical experiments on the total D–D fusion neutron yield versus deuterium pressure for different energy plasma focus devices using the Lee model code
Plasma Phys. Control. Fusion 65**,** 055022 (2023)
10. **M. Akel**, Sh. Al-Hawat, M. Ahmad, Y. Ballul, D. Gannom, Sh. Ismael, S. Shaaban
X-ray emission from tin (Sn) using the AECS PF-2 plasma focus device
Radiation Physics and Chemistry 198, 110258 (2022)
11. **M. Akel** , Sh. AL-Hawat, M. Ahmad, Y. Ballul and S. Shaaban
Features of Pinch Plasma, Electron, and Ion Beams That Originated in the AECS PF-1 Plasma Focus Device
Plasma 5, 184– 195 (2022)
12. Ł. Marciniak, **M. Akel**, A. Kulinska, S. Lee, M. Scholz, S.H. Saw
Results of plasma radiative compression investigation in the PF-24 device operated with D_2, Ar and (100%-*x*)D_2+*x*%Ar mixtures obtained using the 5-phase Lee model code
Applied Radiation and Isotopes 182, 110118, (2022)
13. Sunil Auluck, Pavel Kubes, Marian Paduch, Marek J. Sadowski, Vyacheslav I. Krauz, Sing Lee, Leopoldo Soto, Marek Scholz, Ryszard Miklaszewski, Hellmut Schmidt, Alexander Blagoev, Maurizio Samuelli, Yeow Sing Seng, Stuart Victor Springham, Alireza Talebitaher, Cristian Pavez, **M. Akel**, Seong Ling Yap, Rishi Verma, Karel Kolacek, Paul Lee Choon Keat, Rajdeep S. Rawat, Ali Abdou, Guixin Zhang and Tõnu Laas
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15. P. Kubes, M. Paduch, M. J. Sadowski, J. Cikhardt, B. Cikhardtova, D. Klir, J. Kravarik, R. Kwiatkowski, V. Munzar, K. Rezac, A. Szymaszek, K. Tomaszewski, D. Zaloga, E. Zielinska, **M. Akel**
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16. P. Kubes, M. Paduch, M. J. Sadowski, B. Cikhardtova, J. Cikhardt, D. Klir, J. Kravarik, R. Kwiatkowski, V. Munzar, K. Rezac, A. Szymaszek, K. Tomaszewski, E. Zielinska, D. Zaloga, and **M. Akel**
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17. P. Kubes, M. Paduch, M. J. Sadowski, J. Cikhardt, D. Klir, J. Kravarik, R. Kwiatkowski, V. Munzar, K. Rezac, A. Szymaszek, K. Tomaszewski, E. Zielinska, **M. Akel**, and B. Cikhardtova
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20. T. Laas, K. Laas, J. Paju, J. Priimets, S. Tokke, B. Vali, V. Shirokova, M. Antonov, V.A. Gribkov, E.V. Demina, V.N. Pimenov, M. Paduch, R. Matulka, **M. Akel**
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21. **M. Akel** , Ł. Marciniak , S. Ismael, D. Gannom, A. Kulinska , S. Lee, M. Scholz , H.-J. Kunze, and S. H. Saw
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22. Sh. Al-Hawat, **M. Akel**, B. Abdallah and M. Abu Kharoub
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23. M. A. Malek,, M. K. Islam, **M. Akel**, M. Salahuddin, S. H. Saw, S. Lee
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BOOKS

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