



Received:
2024-09-22
Revised:
2025-02-18
Accepted:
2025-04-21
Published:
2025-05-21

ISSN: 2538-1857
E-ISSN: 2645-5250



Science and Technology Diplomacy and Its Application Requirements in the De-securitization Strategy of the Islamic Republic of Iran

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Abstract

In the era of globalization, with changes and evolutions in the attitudes of different countries towards each other using new tools and capacities, The perspective of countries has also shifted from traditional diplomacy to an approach based on modern diplomacy, and traditional diplomacy, which was mostly a tool in the hands of governments, has shifted towards soft diplomacy. On this basis Amid growing globalization and evolving diplomatic practices, science and technology diplomacy (STD) has emerged as a vital soft power instrument for nations seeking to advance their interests, reduce tensions, and reshape their international image. Science and technology diplomacy holds significant potential in securing national interests across political, social, security, and cultural domains. This study explores how STD can contribute to the de-securitization of the Islamic Republic of Iran, which has long been subjected to security-based narratives imposed by regional and international actors due to political and ideological divergences. Following the 1979 revolution, Iran adopted distinct strategies often diverging from global norms leading to its positioning as a key security actor in the region. The central question addressed is: How can science and technology diplomacy influence the de-securitization of the Islamic Republic of Iran? The hypothesis proposes that STD via academic exchanges, international scientific cooperation, participation in global scientific organizations, and the advancement of knowledge-based power can reshape elite perceptions and foster progressive knowledge communities, thereby

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contributing to the de-securitization process.

This research integrates Joseph Nye's concept of soft power with the Copenhagen School's theories of securitization and de-securitization, alongside functionalist and neo-functionalist approaches. This theoretical combination enables a deeper understanding of how scientific collaboration can reshape perceptions and promote peaceful cooperation in politically sensitive environments.

In this research, The foundations for the formation of science and technology diplomacy and global experiences in this field, The process of securitization of the Islamic Republic of Iran, it has been examined by regional and trans-regional countries and the ways of de-securitization and securitization of the Islamic Republic of Iran.

Methodology

A descriptive-prescriptive methodology is employed to analyze Iran's current diplomatic challenges and opportunities, particularly in relation to sanctions, regional tensions, and engagement in global scientific discourse.

Result and discussion

The research presents practical strategies to enhance Iran's scientific diplomacy, including increased participation in international scientific organizations, support for knowledge-based economic initiatives, and retention of domestic scientific talent. Case studies such as post-Cold War U.S. China scientific cooperation and SESAME in the Middle East illustrate viable pathways for Iran.

A critical insight is that as long as Iran's policies in science and technology diplomacy are targeted, rational, and devoid of emotional or propagandistic approaches, this diplomacy can serve to reduce the impact of sanctions. Scientific and technological sectors that allow maneuvering within foreign policy can weaken anti-Iran coalitions and mitigate insecurity. Building formal and informal ties with scientific institutions can apply diplomatic pressure on sanctioning countries. Simultaneously, enhanced cooperation and interaction with international scientists and institutions can improve Iran's global image and foster convergence and a shift away from security-driven narratives. Despite facing international sanctions and a securitized image, Iran has attempted to leverage STD to reshape its global identity through scientific collaborations, multinational

research projects, and academic exchanges. However, obstacles such as brain drain, institutional limitations, and lack of strategic planning hinder Iran's full utilization of STD for de-securitization purposes.

Conclusion

This study analyzes how science and technology diplomacy can help counter the securitized portrayal of the Islamic Republic of Iran by regional and international actors. Applying the frameworks of soft power, securitization/de-securitization (Copenhagen School), and (neo)functionalism, the study suggests that STD offers a meaningful path for Iran to reframe its global image. Since its establishment, the Islamic Republic has consistently faced efforts by regional and extra-regional actors to portray it as a threat—culminating in broad sanctions, its inclusion in the “axis of evil,” and Security Council actions over its nuclear program. These steps have contributed to Iran's securitized global image.

Science and technology diplomacy presents a promising strategy for Iran to reduce these security-oriented narratives. By fostering trust, mutual understanding, and peaceful collaboration through scientific engagement, Iran can progressively shift perceptions and establish itself as a constructive actor regionally and globally. However, this process requires a sustained, well-planned alignment of scientific development with foreign policy goals.

Accordingly, by utilizing science and technology diplomacy, it is possible to overcome many of the challenges and differences that exist in the region and have a positive outlook on relations between countries in the region in the future.

Keywords: Science and Technology Diplomacy; Soft Power; De-securitization; Securitization; Islamic Republic of Iran.

References

- Azarshab., M. Taghi, Momeni., M J. (2017). Regional Security Requirements and Iran's Strategic Security in the Middle East, *Strategic Politics Quarterly*, 1(2). (In Persian).
- Asghari, F. (2017). International Student Mobility Program and Analysis of Challenges of International Students in Iran, *Iranian Higher Education Scientific Research Quarterly*, 13(2), (In Persian)

Baghban, M.; Sanaei, A. (2024). Approaches to Science and Technology Diplomacy of the Islamic Republic of Iran, *Science and Technology Policy Quarterly*, Volume 14(2). (In Persian)

Bakhtiari, T.; Barzegar, E.; Goodarzi, B. (2022). Audiences in the Process of Securitizing the Islamic Republic of Iran, *Contemporary Political Research*, Institute for Humanities and Cultural Studies, *Scientific Quarterly*, 13(3). (In Persian)

Bashir, H. (2015). *Public Diplomacy; Global Policies and Programs*, Tehran, Imam Sadeq (AS) Publications. (In Persian)

Buzan, B., Weaver, O.L., Dewilde, P. (2007). *A New Framework for Security*, translated by Alireza Tayyeb, Tehran, Strategic Studies Research Institute.

Buzan, B., Weaver, O.L. (2009). *Regions and Powers*, translated by Rahman Ghahramanpour, Tehran, Strategic Studies Research Institute.

Chehrazad, S. (2019). Science and Technology Diplomacy in International Relations, *Political Studies Quarterly*, 12(45). (In Persian)

Cham Asemani, M.; Narenji Sani, F.; Mir Kamali, M.; & Zolfagharzadeh, M. (2014). Immigration of Academic Elites from the Perspective of Higher Education Functions in Iran; *Management and Planning Quarterly in the Educational System*; Volume 17, No. 1. (In Persian)

Dostar, M., Foroughi, N., Norouzi, Kh., & Javadi, M. (2013). Elite Attracting Strategies in the Higher Education System of the Islamic Republic of Iran Using the Quality Performance Expansion Model, *Strategic and Macro Policies Quarterly*, 1(4). (In Persian)

Dahshiri, M. R., Taheri, M. (2016), *Educational Diplomacy of the Islamic Republic of Iran in Central Asia, Central Asia and the Caucasus*, No. (In Persian)

Dehshiri, M. R. (2014), *Cultural Diplomacy of the Islamic Republic of Iran*, Tehran, Scientific and Cultural Publications.. (In Persian)

Davis, L.; Patman. (2018). *Knowledge Diplomacy: A New Day or a False Morning*; Translators: Mashayek, Javad; Norouzi, Effat; Saremi, Saeideh; Tehran; Rasa Publications

Dehshiri, M. R., Taheri, M.; Ranjir, H. (2016). The Place of Internationalization of Higher Education in Iran's National Resources, *Quarterly Journal of International Studies*, 13(3). (In Persian)

Dehghani Firouzabadi, J., Alavi, M.A. (2016). The Process of Securitizing the Nuclear Activity of the Islamic Republic of Iran by the Israeli Lobby in the United States from the Perspective of the Copenhagen School, *Quarterly Journal of Strategic Policy Research*, 5(17). (In Persian)

Esmailzadeh, A. A.; Zakir Salehi, Gh. R (2014). Study of the Migration of Scientific Elites in Iran, *Strategic Studies of Sports and Youth*, 13(26). (In Persian)

Fattahi Ardakani, H., Masoudina, H., Imamjoomehzadeh, J. (2018). Analysis of the concept of power and its constituent sources from the perspective of Joseph Nye, *Two Quarterly Scientific-Research Journals of Soft Power Studies*, 8(18). (In Persian)

Eltiaminia, R., Tagvaeinia, A. (2016). Explaining the Role and Position of Soft Power in Realizing Domestic and Foreign Policy Goals, *Islamic World Political Research Quarterly*, 6(3). (In Persian).

Ghadimi, A. (2017), *The Function of Science and Technology Diplomacy in the Islamic Republic of Iran and the United States*, *Politics Quarterly*, 47(1). (In Persian)

Gluckman, V. Turekian, R.W. Grimes, and T. Kishi, (2017). Science Diplomacy: A Pragmatic Perspective from the Inside, Science & Diplomacy, Vol. 6, No. 4 .

Hvidt, M . (2021), Reaching for the Stars: How and Why do the Gulf States Aim to Transform Their Economies to 'Knowledge-Based Economies? <https://blogs.lse.ac.uk/mec/>

19/08/2021

Haji Abbasi, H.; Parvin, E. (2013). Challenges and Strategies for Attracting International Students in Iran, Research Center of the Islamic Consultative Assembly. (In Persian)

Hosseini, D. (2012). The Process of European Integration with a Neo-Functionalist Approach; History Research Journal, No. 20. (In Persian)

Khalouzadeh, S. (2012). The Diplomacy of the European Union Sanctions Against Iran's Nuclear Program, Iranian Studies in International Politics," (1)1. (In Persian)

Koushki, M. S., Bijani, M. (2019). An Investigation of the Causes of Saudi Arabia's Efforts to Securitize Iran's Peaceful Nuclear Activity, Security Horizons, 13(47). (In Persian)

Kolayi, E., Azizi, H. (2017), Iran's Scientific Diplomacy in Relations with Georgia, Politics Quarterly, 47(4). (In Persian)

Kohkan, A., (2012) The Place of Scientific Diplomacy in Foreign Policy; Suggestions for the Thirteenth Government, Strategic Studies of Public Policy; 12th Volume; Special Issue. (In Persian)

Kohkan, A.; Bashir, H. (2019). "Scientific Diplomacy as Soft Power: From Global Experiences to Local Model", Political Researches of the Islamic World, 9(4). (In Persian)

Kiarash, F.; Navab Irani, P. (2013). Providing a Framework and Analyzing the Functions of National Innovation Agencies (Case Study of the Deputy for Science, Technology and Knowledge-Based Economy); Management Improvement Quarterly, No. 4. (In Persian)

Keyvan Hosseini, A.; Bahrami, Z. (2019). The Application of Scientific Diplomacy for Peacebuilding in the Middle East, Middle East Studies, 106. (In Persian)

Knight, J., (2022). Understanding & Applying the Key Elements of Diplomatic Knowledge: The Role of International Higher Education, Higher Education Association, No. 19, <https://files.eric.ed.g>

Mohammadipour, T. (2014). The Role of Educational Diplomacy in the Foreign Policy of States", Faculty of Law and Political Science, Allameh Tabatabaei University. (In Persian)

Majdabadi, A.; Alamkhah, A. (2017). Prioritizing the Development of Iranian Technology Application with the TOPSIS Approach (Case Study of Sub-Sectors of Agriculture, Industry and Medicine), Rahbard Journal, No. 85. (In Persian)

Mohseni Sohi, H. S., Mohseni Sohi, F. S. (2015). The Impact of Science and Technology Diplomacy on Increasing Iran's Soft Power, Islamic University Management, 4(1). (In Persian)

- Mortazavi Emami Zavareh, S. A. (2019). Analysis of the Performance of Economic Diplomacy and Cultural Diplomacy of the Islamic Republic of Iran in the Middle East under Economic Sanctions, Center for Strategic Studies of Cultural Relations, 5(11). (In Persian)
- Mukarrampour, M. B., Javadi Arjomandi, M. J., Bagherinia, H., & Jahanara, H. (2012). The Impact of Science and Technology Diplomacy on Iran's National Power in the Global Arena, Quarterly Journal of Political Interpretation Knowledge, 2(12). (In Persian)
- Masoumi Tabar, A.; Foroughi Nia, H.; Mehrbabaie, A. (2012). A Reflection on the Nature of States' Obligations for the Right to Economic Development Arising from Nuclear Technology", Journal of New Technologies Law, No. 6. (In Persian)
- Mirkooshesh, A. H. (2018). "Scientific and Technological Diplomacy and National Power (Case Study of Central Asia and the Caucasus), Journal of Politics and International Relations, 1(2). (In Persian)
- Mehravargiglu, Sh.; Khorsandi Tasko, A. (2012). Analysis of the Current Status of International Scientific Cooperation in Iranian State Universities, Leadership and Applied Education Scientific Journal, 3(1). (In Persian)
- Mehdizadeh, M. (2010). Strategic Goals of the Elite System in the Thought of the Supreme Leader; Strategy Quarterly, 29(94). (In Persian)
- Mousavi Khorshidi, M.J. (2015). The Role of Modern Public Diplomacy in Securing the Interests of the Islamic Republic of Iran, Politics Quarterly, 2(6). (In Persian)
- Musa Khan, M., Ahmad, R. (2020). Diplomacy and Education: A Systematic Review of Previous Literature, World Social Science Review, V (III).
- Nye, J. (2021). Soft power: the evolution of a concept. Political Power. <https://doi.org/10.1080/2158379x.2021>.
- Nye, J. (2009). Soft Power and Leadership, Translated by Asgar Ghahramanpour, Scientific-Specialized Quarterly Journal of Psychological Operations, Year 6.
- Naghdi, J. (2003). Explanation of the Power of the Islamic Republic of Iran Based on Currency Power, Foreign Relations, 11(4), (In Persian)
- Noormohammadi, M.; Mohammadipour, T. (2018). Scientific Diplomacy in Iran's Superior Documents and How to Interact with International Organizations, Iranian Journal of International Politics, 7(1). (In Persian)
- Noormohammadi, M.; Mohammadipour, T. (2016). The Place of Educational Diplomacy in Saudi Arabia's Foreign Policy in the Middle East Region; Quarterly Journal of Political Studies of the Islamic World; 5(19)
- Norouzi, E.; Mashayek, J.; Mohseni Kiasari, M. (2018). Analysis of the Concept and Dimensions of Science and Technology Diplomacy Based on the Meta-Combination Approach, Scientific-Research Journal of Innovation Management, 7(2). (In Persian)
- Niakoui, A., Haji, V. (2019). "Expanding Relations between the Gulf Cooperation Council and Israel: An Explanation from a Realist Perspective", Quarterly Journal of World Politics, 9(3). (In Persian)
- Niknam, R. (2019). The Place of Science and Technology Diplomacy in Shaping Soft Power (Case Study of the European Union); Quarterly Journal of Politics, Journal of the Faculty of Law and Political Science; 29(2). (In Persian)

- Nye, J., (2014). The Future of Power, Translators: Heidari, Mohammad, Farzad, Arash, Tehran, Farzan Press.
- Nye, J. (2014). The Future of Soft Power", Translators: Heidari, Mohammad, Farzad, Arash, Tehran, Foruzan Press.
- Nye, J. (2008). Power in the Information Age from Realism to Globalization, Translator: Mirtorabi, Saeed, Tehran, Strategic Studies Research Institute.
- Peterson, M. (2014). Diplomacy and Education: A Changing Global Landscape, Higher Education Association International, No75, [https:// ejournals bc.edu/](https://ejournals.bc.edu/).
- Perez García, E. (2021). From Soft Power Politics to Academic Diplomacy, CIJChina: An International Journal, Volume 19, Number 4, [https:// rio.upo.es/](https://rio.upo.es/)
- Qanbarloo, A. (2008). America and the Iranian Nuclear Crisis, Strategic Studies Quarterly, (4) 11. (In Persian)
- Rafini, P. (2018). Science and Diplomacy: A New Dimension of International Relations of Science, Technology and Innovation, translated by Ghaemi, Seyed Mehdi; Tehran; Cultural and Social Studies Research Institute.
- Rastegari, M.H. (2016). "Cultural Diplomacy of the Islamic Republic of Iran, Challenges and Arrangements", first edition, Tehran, Pooyeh Mehr Eshraq Institute. (In Persian)
- Rabiei, H. (2019). The Evolution of the Concept of Power in the Twenty-First Century and the Future of the Balance of Power in the Southwest Asian Region, Quarterly Journal of Political Planning of Space, 3(1). (In Persian)
- Rahmani, M. (2014). Public Diplomacy and Foreign Policy, Quarterly Journal of Strategic Studies of Globalization, 6(15). (In Persian).
- Rostami f., Ghaemi, Y. (2019). Securitization of Iran in the Light of Progress in the Field of New Technologies, Quarterly Security Horizons (42)12. (In Persian)
- Rouhani, A., Anbarloo, M. (2018). Qualitative Study of the Position of Young Iranian Elites in the Context of Iranian Society; Applied Sociology, Year 29, Serial Number 70, Number 2. (In Persian)
- Samiei Esfahani, A.R., Kamali, M. H. (2012). Explaining the Method of Operation and Goals of the US Maximum Pressure Policy towards the Islamic Republic of Iran, "Political Studies of the Islamic World, (2) 11. (In Persian)
- Simbar, R., Pirmohammadi, S., Lotfi, K. (2018). The Role of the Saudi Lobby in America in the Process of Securitizing Iran's Nuclear Program, Security Horizons, (40) 11. (In Persian)
- Shafizadeh, H. (2013). Investigating the Most Important Challenges and Strategies for Attracting Foreign Students in Iran (Using Focus Group Techniques), Rahbard, (69) 22. (In Persian)
- Shahbazi, S., Masoudnia, H., Goodarzi, M. (2019); "Convergence in the Middle East; Challenges and Solutions"; Journal of Political and International Studies; Issue 39(8). (In Persian)
- Sabour, M., Zamani, Gh. (2019). Security Council Resolution 2231 and the US Withdrawal from the JCPOA: From the Degradation of Article 103 of the United Nations Charter to its Degradation, Journal of Legal Research, No. 4. (In Persian)
- Sani Ejlal, M. (2019). The Requirements for Realizing Regional Integration in the Islamic World: A Case Study of the Role of Scientific Cooperation, Political Studies of the Islamic World, 11(4). (In Persian)

- Sani Ejlal, M. (2019). "The Role and Position of Internationalization in the Future of Nanotechnology Development in Iran", *Bi-Quarterly Journal of Iranian Future Studies*, 5(1), (In Persian)
- Taheri, E., Abediardekan, M., Hadadi Ahangar, Y. (2022). *The Role of Science and Technology Diplomacy in Preventing Nuclear Proliferation* (A Case Study: EU and Kazakhstan 'Geopolitics Quarterly, Volume: 17, No 4, Winter 2022' PP 307-333. (In Persian)
- Turekian, V., Gluckman, P. (2010). Science Diplomacy and the Rise of Technopoles https://www.aaas.org/sites/default/files/New_Frontiers.pdf.
- Takhshid, M.R., Hatemzadeh, A. (2018). Transatlantic Convergence in Securitizing the Islamic Republic of Iran: Trends and Patterns, *Strategic Studies Quarterly*, No. 79. (In Persian)
- Tarki, H. (2023). Analysis of Obama, Trump and Biden's Coercive Diplomacy Towards Iran, "Political Culture", 1(2). (In Persian)
- Taslimi, S., Norouzi, Kh., Javadi, Mojtaba. (2016). Paradigm Model of the Country's Science and Technology Mediating Institutions (Case Study: Vice President for Science and Technology of the 10th Presidential Administration); *Strategy Quarterly*, 25(9). (In Persian)
- Taremi, K., Moradi, I. (2014). A Study of the Foreign Policy of the Islamic Republic of Iran with the European Union in the Last Three Decades, "International Relations Research", 17(28). (In Persian)
- Taheri, E., Esmaeili, M. (2019). Science and Technology Diplomacy in Central Asia; *Central Eurasia Studies*, 12(2). (In Persian)
- Vaziri, I., Sabouri, A. A. (2021). International Scientific Interactions, Pioneer of Science and Technology Diplomacy, "Nasha' Alam Journal", 12(1). (In Persian)
- VanLangenhove, L. (2017). Tools for an EU Science Diplomacy, Brussels: European Commission.
- Zarezadeh Abarghoi, R. (2017). Copenhagen's View on Securitization: Foundations and Challenges, *Security Horizons*, (36) 10. (In Persian)
- VanLangenhove, L. (2017). Tools for an EU Science Diplomacy, Brussels: European Commission
- Zaharta, R. (2014). Public Diplomacy and Strategic Communications of the United States after September 11, Translator: Zolfaghari, Mehdi, First Edition, Tehran, Imam Sadeq University Press. (In Persian)
- Zakir Salehi, Gh. R. (2007). Meta-analysis of Studies Conducted in the Field of Elite Attracting and Emigrating, *Journal of Iranian Sociology*, 8(1). (In Persian)
- most of the elite Migrants are attracted to startups and knowledge-based companies, May15, 2018. Accessible at: <https://dolat.ir/detail/308260>. (In Persian)
- Iran scientific ranking in the international arena, Nov21, 2023 Accessible at: <http://isc.ac/fa/grid/206>. (In Persian)