



## 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.

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