

# Women in STEM in Japan: Current Efforts and Challenges

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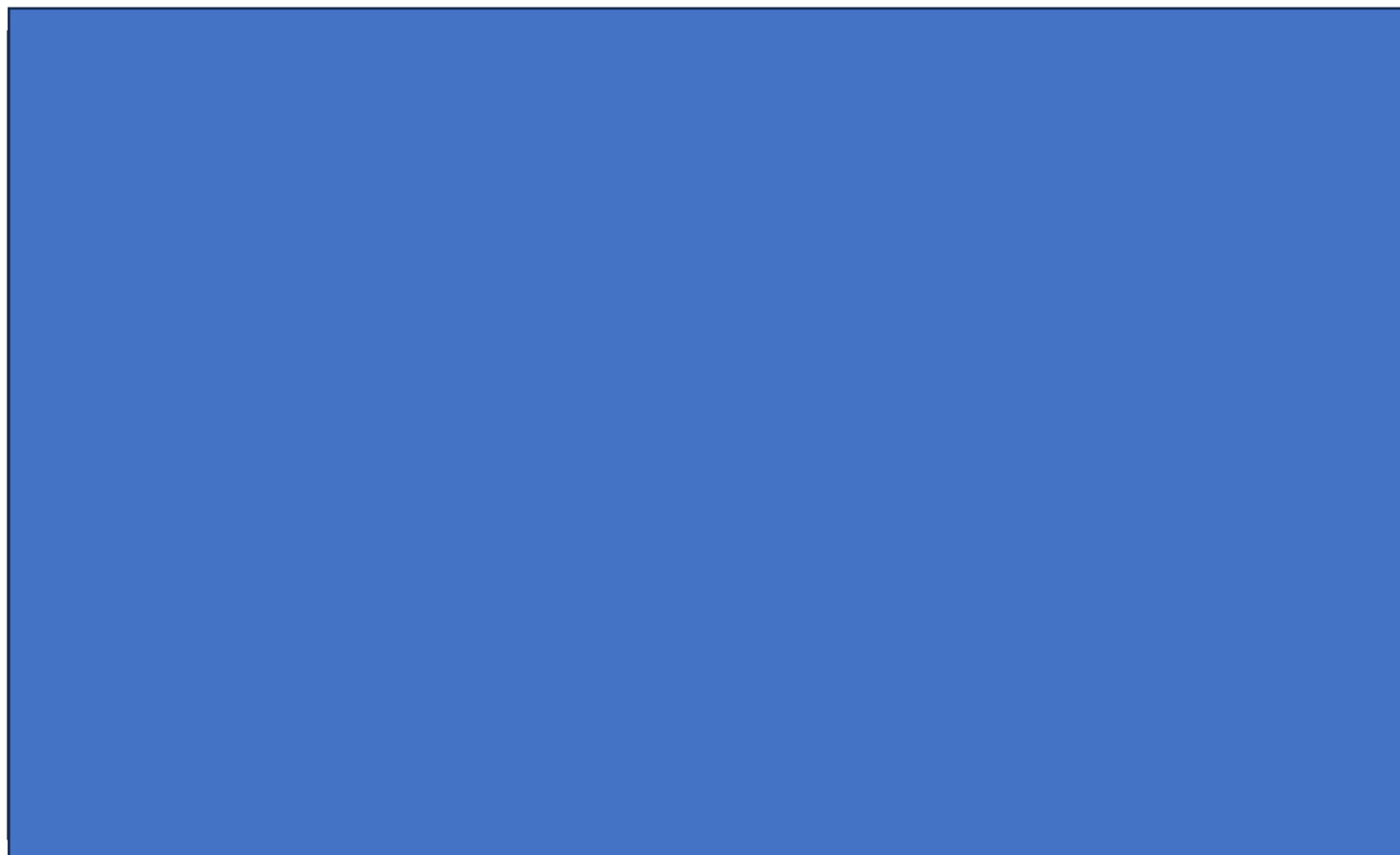
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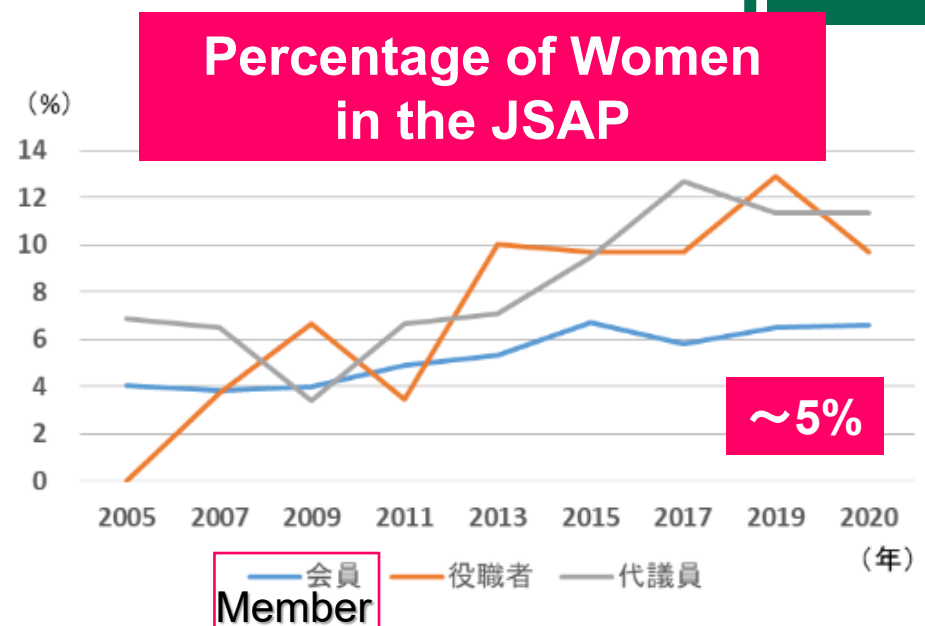
AADDs-DPP2025, 23<sup>rd</sup> Sep. 2025, Fukuoka

# The Reality of Japan in the Field of Appl. Phys.



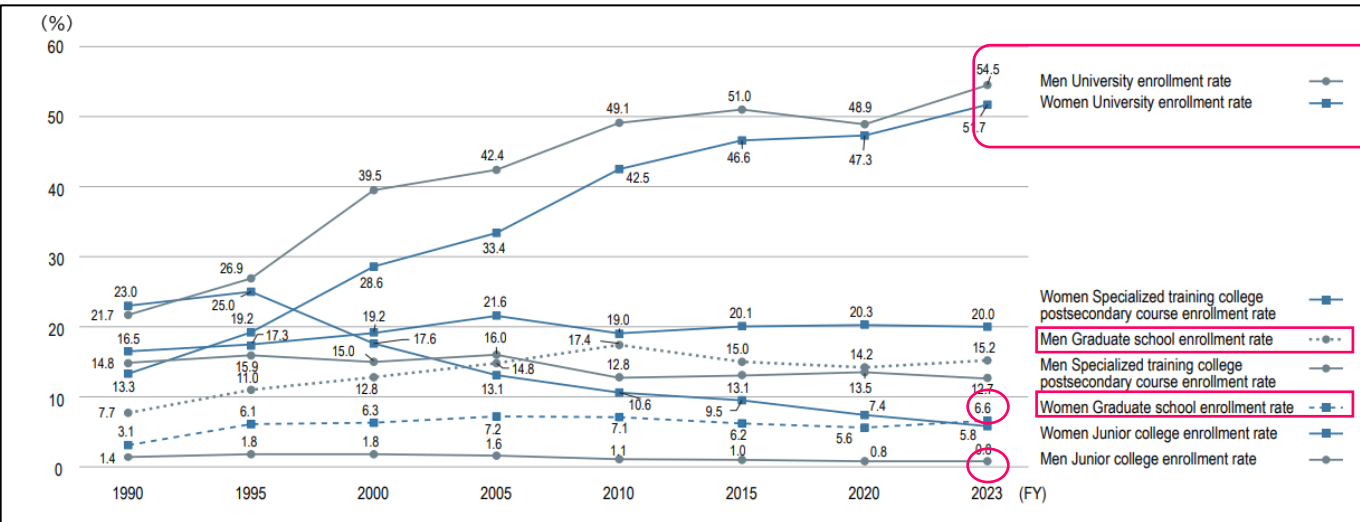
## The Japan Society of Applied Physics (JSAP)

- ◆ Semiconductors, Optoelectronics and Quantum Electronics, New Materials, **Plasma Electronics**
- ◆ ~ 20,000 members

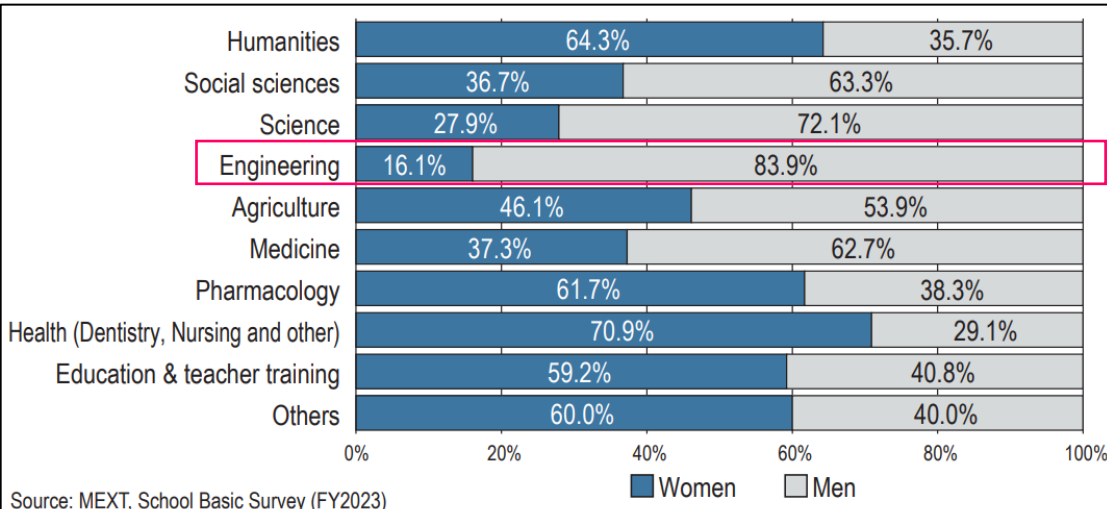


# From High School to University

## Percentage of high school graduates who proceed to higher education



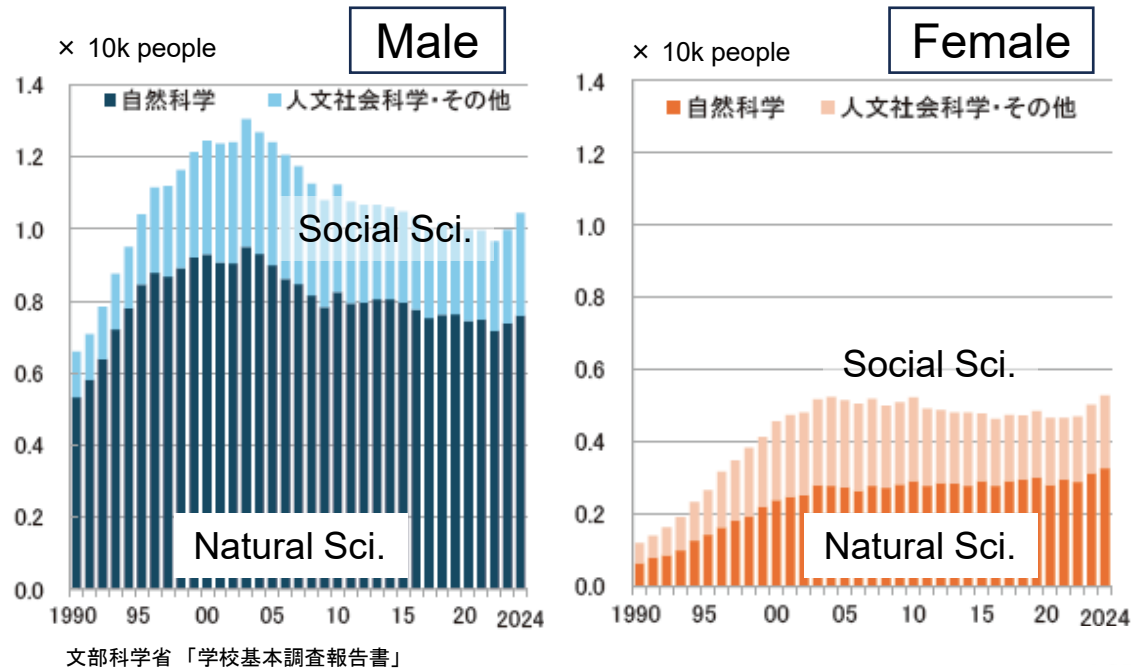
## Female UG Students of Engineering at Nagoya Univ. (2023)



- Undergraduate enrollment is increasing, with little gender disparity
- The proportion of women in the Engineering remains low (Particularly low in mechanical, electrical, and physical science and engineering)
- Few students advance to M's and Dr programs

# Female Researchers

## Doctoral Program Entrants



- Female researchers (all sectors): ~18.5% (2024)  
(Companies: 12.1%, Public institutions: 21.6%, Universities: 29.2%, Nonprofit organizations: 17.1%)
- Female CEOs among top ~1,600 listed firms: ~13 (≈0.8%)
- WEF Global Gender Gap 2025: Japan ranks low among G7

# What's the Problem? ~ Talent & Innovation~

## Current evidence (narrow at entry → thinner at the top)

- **Engineering entry is narrow:**

Women ≈ 16% in Japan (vs ~27–28% OECD average, EMC).

- **Low in research roles:**

Women researchers (all sectors) 18.5%; in business R&D ~11.6%.

- **Thin in leadership:**

Women managers in manufacturing ~9–10%.

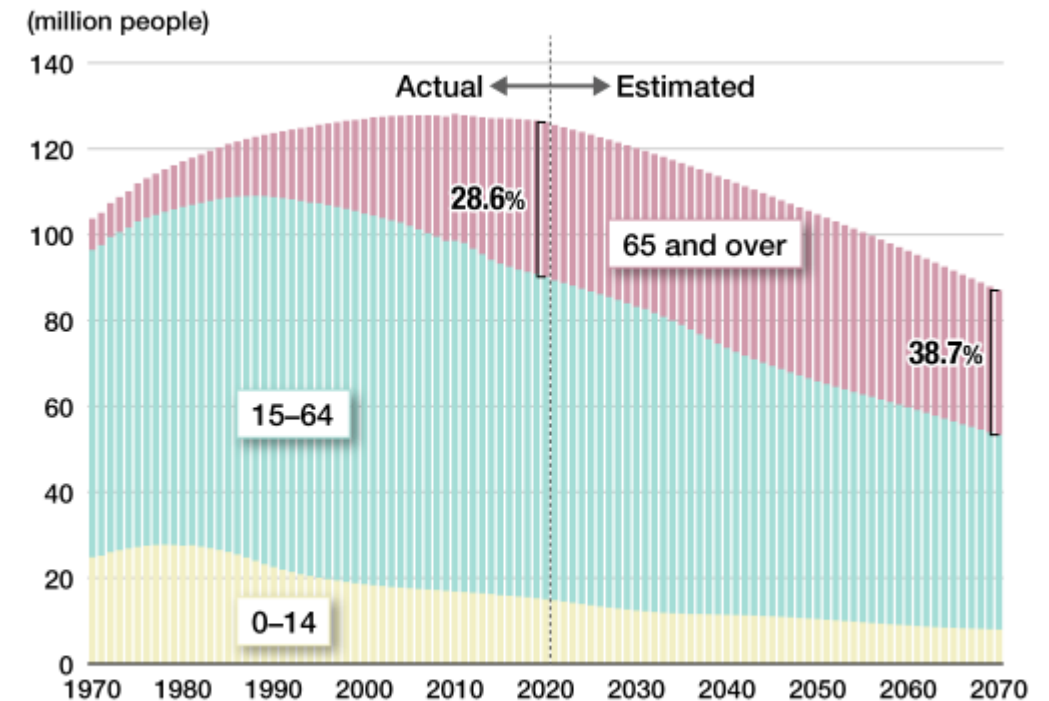
→ Small intake × leakage along the way

**⇒ Structural shortfall of STEM talent.**

# Why it matters (direct hit to competitiveness)

- **With population aging**, securing STEM/digital talent is a national growth and resilience issue.
- **A narrower diversity base** reduces R&D speed, variety of ideas, and market-creating capacity.
- **Universities & firms lose ground in global competition**; clogged pipelines drive talent outflows.

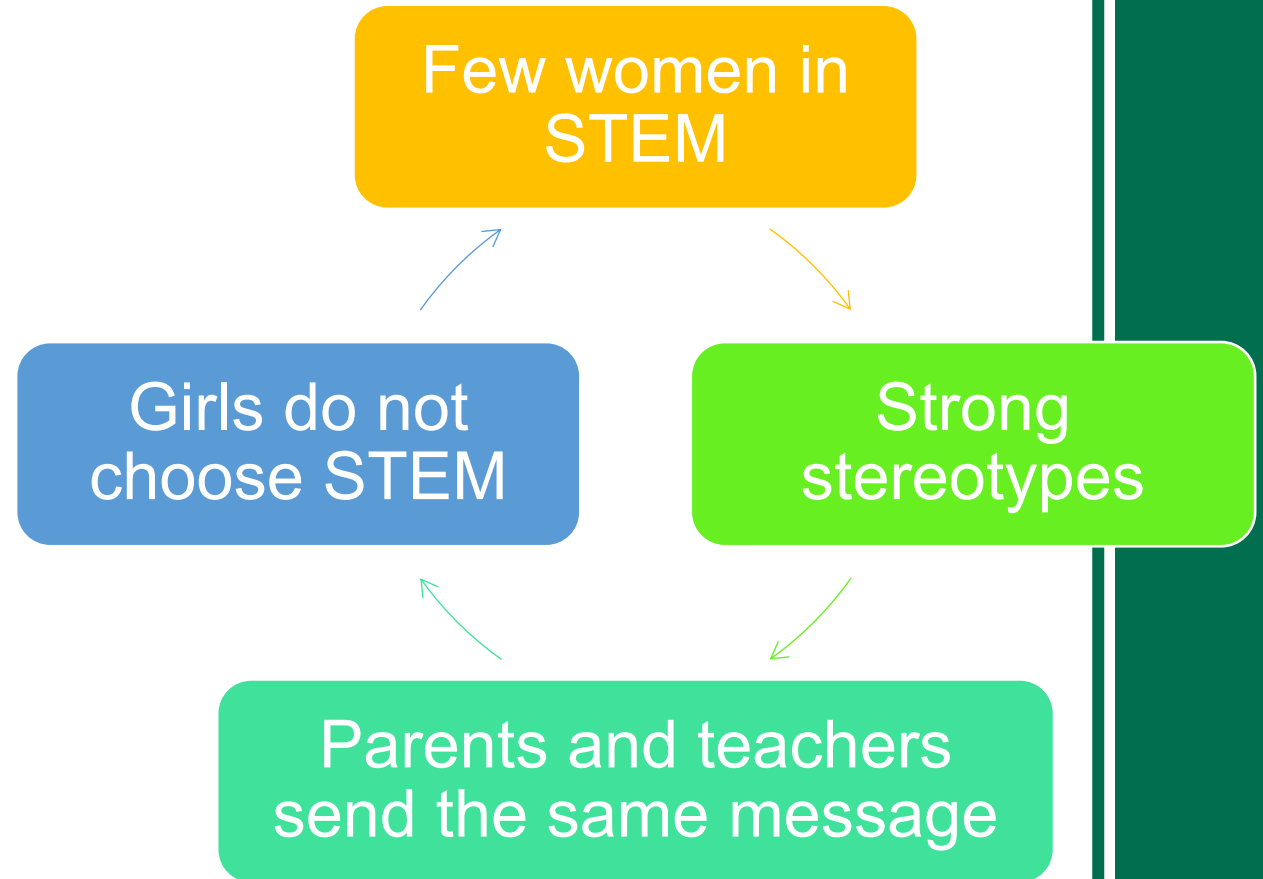
Population Change in Japan



Created by Nippon.com based on data from the National Institute of Population and Social Security Research.

# Why does the share of women stay low?

- Lower self-confidence (PISA suggests): Scores are good, but girls feel “I can’t do it.”
- Stereotypes / few role models: People still think “engineering = for boys.”
- Poor career info: It’s hard to see what engineers do and how careers grow.
- Unequal care and housework, and limited support from partners



# University Actions in Japan

- **Admissions changes (“women’s quota”) in STEM**; early reports show higher women’s share after adoption.
- **In-program support**: women’s lounges and networks, mentors & sponsors, research assistants during life events, flexible rules, clear “leave-aware” evaluation, strong anti-harassment practice.

**Path to impact**: improve entry + build community & mentoring + transparent evaluation → higher persistence and leadership.

“This is not about ability. It’s about **information, support, and fair systems—from entry to leadership.**”

# Example: Nagoya University

for Girls in Middle and High School  
and Their Parents

Open Campus for STEM fields

## Undergraduate admission:

Ex) Dept. of Electrical engineering

- Class size: 118
- 106 by the test score (Common Tests + NU Entrance Examination)
- 12 by holistic evaluation (Similar to US college application but needs to be nominated by high school applicants are graduating)
- 6 of 12 are exclusively for female students

## Fellowship for female students

- PhD / Master course

# Example: Nagoya University

## Female faculty hiring:

- Female only PI posts
- Financial supports by Provost office to hire and promote female faculty
- Scoring system:
  - Points awarded to departments if hiring or promoting female faculty
  - The department with the highest accumulated points in 3 years wins: further financial supports to hire female faculty or research funds for female faculty
- Female researcher leadership program
- Childcare service on campus

**These steps make it easier to join, stay, and grow**