

YONG SUP CHOI

PLENARY TALK 3

Plasma Technology of IPT-KFE for Sustainable Society

Yong Sup CHOI^{1*}

¹ Institute of Plasma Technology, Korea institute of Fusion Energy, Gunsan
Zip:054004, Korea

***Corresponding author:** yschoi@kfe.re.kr

Abstract

The Korean government-funded Institute of Plasma Technology at Korea institute of Fusion Energy(IPT-KFE) is developing the fundamental, core, and convergence technologies of plasma. The fundamental plasma technologies are cross section measurement and calculation, plasma material interaction, plasma modeling and simulation, and diagnostics and control. The core technology is development of new type plasma sources and innovation in applied plasma sources. The convergence technology is industrial applications of core technology. Current environmental research activities and applications of plasma technologies for sustainable society will be presented, including plasma waste treatment, gas abatement, water treatment, and so on.

Keywords: Plasma, Environment, Waste, Sustainable

CURRICULUM VITAE



Name:	Yong Sup CHOI
Academic positions:	Director General
Workplace:	Institute of Plasma Technology, Korea institute of Fusion Energy
Address:	37 Dongjangan-ro Gunsan, Republic of Korea
Email:	yschoi@kfe.re.kr
Expertise:	Plasma equipment technology



Education History

[Doctorate]	1998-2005	Department of Nuclear Engineering, Hanyang University
[Master]	1995-1997	Department of Nuclear Engineering, Hanyang University
[Bachelor]	1991-1995	Department of Nuclear Engineering, Hanyang University



Professional Background

2021-present	General Director, Institute of Plasma Technology, Korea Institute of Fusion Energy
2014-present	Senior Researcher, Convergence Technology Research Department, Korea Institute of Fusion Energy
2014-2018	Adjunct Professor, Materials Sic. & Eng., Kunsan National University
2011-2014	Researcher, Convergence Technology Research Division, National Fusion Research Institute
2005-2011	Senior Researcher, Equipment Development Team, Samsung



Selected Awards and Honors

1.	2022	2021 Top 100 Excellent National Research and Development Achievements
2.	2021	Ulsan Metropolitan City Mayor's Commendation for Contributions in the Innovative Industry Sector
3.	2020	Minister of Trade, Industry and Energy Commendation for Contributions in the Promotion of Science and Technology (Intellectual Property Sector)
4.	2015	Korea Institute of Fusion Energy President's Commendation for Technical Excellence (Outstanding Award)



Selected Publications

1. Dry reforming process using microwave plasma generator with high carbon dioxide conversion efficiency for syngas production, Fuel Volume 361, 1 April 2024, 130707
2. Measurement of Mach probe on plasma flow velocity in highly collisional plasma jet, Current Applied Physics, Volume 39, July 2022, Pages 45-50
3. Silicon Carbide Wafer Machining by Using a Single Filament Plasma at Atmospheric Pressure, Coatings 11, 2021
4. Development of Silicon Carbide Atomic Layer Etching Technology, Thin Solid Films 707, 2020
5. Morphological optimization and nitrogen functionalization of vertically oriented CNW for high performance electrical double layer capacitor electrode, Electrochimica Acta 348(10), 2020