



# First Circular CUUTE-1

**The First Symposium on Carbon Ultimate Utilization  
Technologies for the Global Environment**

**Date** Tue 27 - Fri 30 October, 2020

**Venue** Nara Kasugano International Forum 葛 IRACA

**URL** <http://web.apollon.nta.co.jp/CUUTE-1/>



**Organized by :**  
The Iron and Steel Institute of Japan, ISIJ



**Co Organized by :**  
The Society of Chemical Engineers, Japan







## Introduction



On behalf of the symposium, it is my great pleasure to introduce you to the First Symposium on Carbon Ultimate Utilization Technologies for the Global Environment (CUUTE-1), Nara, Japan, on 27th -30th October, 2020.

The major themes of this new conference will be ultimate carbon utilization, and establishment of low-carbon industries and society. The UN Intergovernmental Panel on Climate Change (IPCC) considers carbon dioxide (CO<sub>2</sub>) emissions as a factor in global warming. Modern steel industry and other manufacturing sectors have achieved high energy savings and reduced CO<sub>2</sub> emissions. However, further activities are required to further reduce carbon according to the demands of the times.

Carbon has highly exergy and is essential as an energy source for efficient operation of industry, and innovative effective utilization technologies of carbon resources according to CO<sub>2</sub> emission control is expected to be important more. Then, this new conference is organized to seek paths for ultimate utilization of carbon resources in the iron and steel industry and manufacturing industries for still having harmony with the global environment. Topics include utilization technology of carbon resources in iron and steel, chemical and manufacturing industries, and CO<sub>2</sub> recovery, CO<sub>2</sub> utilization for production of carbon materials and industrial utilization of the carbon materials. Also, including carbon energy system assessment and life cycle assessment integrating the entire processes.

CUUTE-1 intends to gather domestic and international knowledge for the development of new low carbon technologies and low carbon processes. This conference will showcase innovation and technology, provide details of the latest industry solutions to carbon utilization issues, and will demonstrate how the industries and researches are meeting those many challenges related with the issues.

I heartily welcome your participation in CUUTE-1 in beautiful Autumn of Nara of the Japanese old capital having 1300 years' history.

**Yukitaka Kato,**

Chair of CUUTE-1,  
Tokyo Institute of Technology

## Conference Venue

**Nara Kasugano International Forum**



Nara Kasugano International Forum is located in the center of Nara Park, which famous for its beauty nature and 1,200 tame deer in a calm atmosphere. Nara was an ancient capital of Japan, and has many historical temples and shrines containing ton of national treasures.

This conference venue is at a walking distance of 20-25 minutes from many hotels in downtown Nara. Public buses will be available as well.

## Contact Us



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## Important Dates :

Start of Abstract Submission	December, 2019
Deadline of Abstract Submission	15 February, 2020
Notification of Abstract Acceptance	15 April, 2020
Deadline of Extended Abstract Submission	30 June, 2020
Deadline of Early Bird Registration	31 July, 2020

## Topics



### 1.Perspective for Low Carbon Society

- (1)**Megatrends in industrial sector:** Energy efficiency, Decarbonization, Electrification
- (2)**Sector coupling:** Poly-production, Synergy system, Material and electricity network
- (3)**System modeling and analysis:** LC-CO<sub>2</sub> analysis, Techno-socio-economic analysis, Carbon recycling, neutral, and negative emission technologies

### 2.Advanced Carbon Utilization

- (1)**Iron and steel making industry:** Ultimate efficiency improvement, Novel processes, Diversification of carbon sources, Process integration
- (2)**Chemical industry:** Oil refinery and petrochemical complex, Inorganic material production, Process intensification and integration
- (3)**Generation and utilization of heat and power:** Utilities in commercial, residential, industrial, and transportation sectors

### 3.CO<sub>2</sub> Utilization and Storage

- (1)**Hydrogen-based energy system:** CO<sub>2</sub>-free hydrogen production, International and domestic supply chain
- (2)**CO<sub>2</sub> capture/separation technologies:** Pre/post combustion removal, Direct air capture, Amine-based solvents, Membranes, Solid sorbents, Chemical looping, Oxy-fuel
- (3)**CO<sub>2</sub> conversion processes:** Electrolysis cells, Artificial photosynthesis, Catalytic methanation and syngas production, Biological conversion
- (4)**CO<sub>2</sub> utilization/sequestration technologies:** Geological/Ocean storage, Enhanced oil/gas recovery, Mineralization, Solid hydrocarbon feedstocks, Enhanced weathering, CO<sub>2</sub> fertilization

## Tentative Schedule



Tue 27 October Registration and Welcome party  
Wed 28 October Technical Sessions  
Thu 29 October Technical Sessions Banquet, Nara Hotel  
Fri 30 October Technical Sessions, Closing Technical Tour

