Venture 1st 호서대학교   AI4U 호서대학교   BrainKorea 21 FOUR

HOSEO UNIVERSITY

Brain Korea 21 Four

International Seminar on
Smart Cities and Disaster Safety

2021. 02. 01

Contents

Ⅰ. Introduction of BK 21 Four Project

BK21 Project: Phase 4   Period : 2020.09.01 ~ 2027.08.31 (7years)

Vision

> **Make World-Class Research Universities**

Goal

> - Enhancement of research competency in core academic fields and cultivation of academic successors
> - Reorganization of graduate school system and improvement of graduate education

Direction / **Contents**

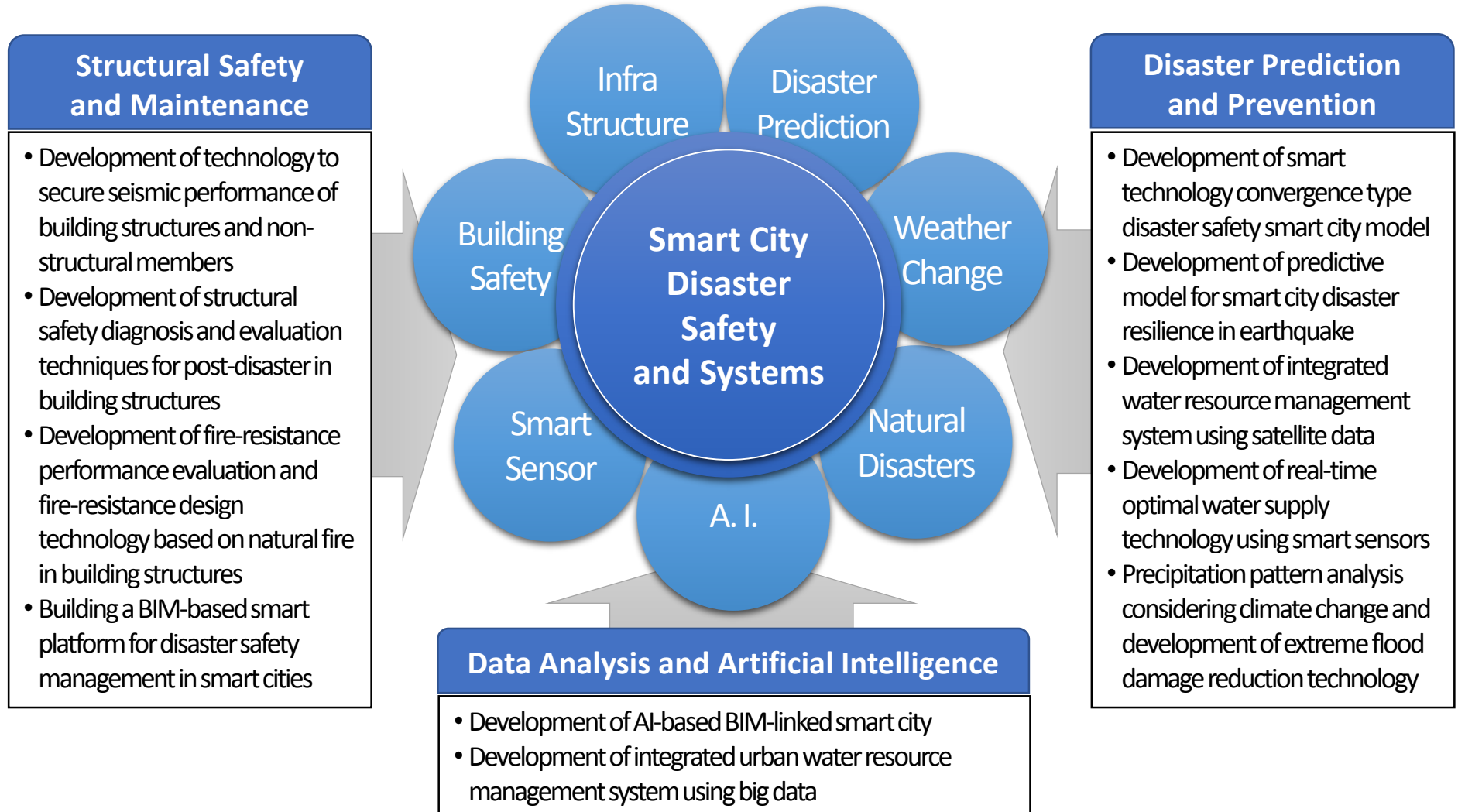| Strengthening Research Competitiveness	Nurturing Master & Doctoral Level Researchers	Improve Graduate Education and Research	Nurturing National / Social Necessary Researchers
- Expansion of qualitative evaluation of research results - Support for linking and contributing research results to various fields	- Expansion of the number of supported masters and doctoral students - Increase research scholarship to study and research	- Enhancement of curriculum and academic management - Induce improvement of constitution in graduate school	- Establishing innovative talent training business - Intensive cultivation of researchers in national core industries

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Educating Practical Digital Convergence Leaders for Disaster Safety Smart City

Structural Safety and Maintenance

- Development of technology to secure seismic performance of building structures and non-structural members
- Development of structural safety diagnosis and evaluation techniques for post-disaster in building structures
- Development of fire-resistance performance evaluation and fire-resistance design technology based on natural fire in building structures
- Building a BIM-based smart platform for disaster safety management in smart cities

Infra Structure

Disaster Prediction

Building Safety

Smart City Disaster Safety and Systems

Weather Change

Smart Sensor

A. I.

Natural Disasters

Disaster Prediction and Prevention

- Development of smart technology convergence type disaster safety smart city model
- Development of predictive model for smart city disaster resilience in earthquake
- Development of integrated water resource management system using satellite data
- Development of real-time optimal water supply technology using smart sensors
- Precipitation pattern analysis considering climate change and development of extreme flood damage reduction technology

Data Analysis and Artificial Intelligence

- Development of AI-based BIM-linked smart city
- Development of integrated urban water resource management system using big data

① Architectural Engineering

Concrete Structure

GeonHo Hong

Steel Structure

InRak Choi

Construction Management

Joseph Ahn

② Civil Engineering

Water Resource Engineering

Gunhui Chung

Geotechnical Engineering

SangHwan Kim

3 Computer Engineering

Artificial Intelligence

Cloud Computing

NamMee Moon

Hong Min

International Cooperation for Research

- Completion of MOU for joint research promotion through graduate education and mutual visits/exchanges with Hunan University and Fuzhou University in China

- Signed an MOU with the Graduate School of Stony Brook Engineer School, USA, and conducts periodic seminars and overseas academic activities and research

- Maintain close international cooperation with developing countries such as Asia as well as advanced countries such as the United States, Europe, and Japan to spread research results.

- Improve international literacy of graduate students taking advantage of the vacation period through intensive lectures by foreign scholars during the vacation period

Harbin Institute of tech.

Shandong Jianzhu University

Stony Brook University

University of Michigan

Hunan University

Fuzhou University

Baylor University

University of Arizona

II. Introduction of Hoseo University

2.1 About Hoseo University

2.2 Campus Video

① History

湖西大學校

- Establishment : 1978. 9. 28
- Founder : Dr. Seok-Gyu Kang
- Key facts (2020)
  - 8 Colleges and 68 Departments
  - Undergraduate Students: 12,621
  - 4 General Graduate Schools, 3 Professional Graduate Schools, and 5 Special Graduate Schools

② Locations

- Asan Campus : 20, Hoeo-ro 79 beon-gil, Baebang-eup, Asan-si, Chungcheongnam-do
- Cheonan Campus : 12, Hoseodae-gil, Dongnam-gu,Cheonan-si, Chungcheongnam-do
- Industry-Academic Convergence Campus (Dangjin) : Sandan 7-ro, Seokmun-myeon, Dangjin-si, Chungcheongnam-do
- Venture Graduate School : 2497 Nambusunhwan-ro, Seocho-dong, Seoul

III. Introduction of Presenters

3.1 Hunan University

3.2 Fuzhou University

Title: Experimental Investigation of Seismic Uncertainty Propagation through Shake Table Tests

Prof. Peng Deng

Prof. Peng Deng, associate professor of Hunan University in China, project leader of the national key research and development plan. He graduated from the Colorado School of Mines with a Ph.D., engaged in the research on the seismic resilience of engineering structures and the construction industrialization technology based on solid waste recycling.

At present, more than 20 papers have been published in authoritative journals such as ASCE Journal of Structural Engineering，Engineering Structures, Bulletin of the Seismological Society of America and Soil Dynamics and Earthquake Engineering. He is responsible for 1 national key research and development project, 1 national natural science foundation project; Also, he is participated in 1 major science and technology project in Hunan Province, and 3 projects funded by the National Natural Science Foundation (NSF) and the United States Geological Survey (USGS).

Title: Pushing the envelope of composite structures using high strength materials

Prof. Zhichao Lai received his Ph.D. from Purdue University in 2014. He is currently the Executive Dean of the College of Civil Engineering and a Professor of Structural Engineering at Fuzhou University. His research interests include (i) resilient and sustainable steel and steel-concrete composite structures, (ii) modular constructions, and (iii) next-generation power plants. He has authored one book, 33 journal articles, and 25 conference papers. His research findings have been cited extensively in the AISC codes and are the basis of several provisions for the design of steel-concrete composite members.

Prof. Zhichao Lai

Title: RUHPC Tension stiffening model and its application

Prof. Xiangguo Wu received his Ph.D. from Kumoh National Institute of Technology in 2008. He is a Minjiang Scholars Professor at Fuzhou University.

His research interests include (i) Ultra high performance concrete and UHPC structures, (ii) Precast and assembling PC structure, and (iii) Wind turbine concrete-steel hybrid tower optimal design and performance evaluation. He has authored more than 80 academic journal and conference papers, on book and four China CCPA Association standards.

Prof. Xiangguo Wu

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Education Center of Creative and Innovative Leaders for

Disaster Safety Smart City

Thank You

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