

8th Korea-Japan Joint Symposium on Composite Materials



Nov., 17(Thur.), 2011,
Changwon Exhibition Convention Center, Changwon, KOREA

The Host Organization : **KSCM**(The Korean Society for Composite Materials)

Sponsor :  **KOFST** | THE KOREAN FEDERATION OF SCIENCE AND TECHNOLOGY SOCIETIES

 Gyeongsangnam-do

 BK21 (Brain Korea 21)

 KIMS (Korea Institute of Material Science)- GRL(Global Research Lab.)

 CHANGWON-SI

 Changwon National University

8th Korea-Japan Joint Symposium on Composite Materials			
Nov. 17, 2011, Room 301, 302			
9:00~9:20	Opening Ceremony Welcoming Address by Prof. S.H. Hong (President of the KSCM) Welcoming Address by Prof. H. Sumemasu (Former President of the JSCM)		
9:20~9:50	Plenary Lecture Lecturer : Prof. Hiroshi Suematsu (Sophia University) Title : Analytical Study on Low Compressive Strength of Composite Laminates with Impact damage		Byung-Sun Kim (KIMS)
Nov. 17, 2011, Room 604			
Time	ID	Title	Chairs, Authors
Nanocomposites I			Jae-Hung Han (KAIST) A. N. Nakagaito (Tokushima Univ.)
10:00~ 11:15	A-01	Composites based on bio-nanofibers	Antonio Norio Nakagaito, Hitoshi Takagi, Jitendra Kumar Pandey (Tokushima Univ.)
	A-02	Interfacial Evaluation of Carbon Fiber Reinforced CNT-Phenolic Nanocomposites by Plasma Modification	Zuo-Jia Wang, Dong-Jun Kwon, Ga-Young Gu (Gyeongsang National Univ.), Woo-Il Lee (Seoul National University), Jong-Kyoo Park (ADD), Joung-Man Park (Gyeongsang National Univ.)
	A-03	Effect of Dispersion on the Properties of MWCNT/Polymer Nanocomposites	Muhammadali Turgunov, Sung-Ho Yoon (Kumoh National Inst. of Tech.)
	A-04	Structural characterization of CF composites with CNT mat	Young-Eun Kim, Han-Sang Kim (KIST)
	A-05	A Study of the Relationship of Shear Property of MWNTs Filled Carbon Fiber Reinforced Polypropylene and Amount of Gelatin (Dispersion Agent)	Jeong U Roh, Sung-Woong Choi, Woo-Il Lee (Seoul National Univ.)
Nanocomposites II			Seok-Woo Jeon (KAIST) M. Endo (Fukuoka Univ.)
11:25~ 12:25	A-06	Mechanical performance of bio-nano composites based on cellulose nanofiber and polyvinyl alcohol	Hiroo Matsumoto, Hitoshi Takagi, Antonio Norio Nakagaito, Jitendra Kumar Pandey (Tokushima Univ.), Masaya Omura (Daicel Chemical ins. Ltd.)
	A-07	Fabrication Process and Characterization of CNT/Co ₃ O ₄ Nanocomposite for Anode of Lithium-ion Battery	Yun-kyoung Kim (KAIST), Seung-Il Cha (KERI), Soon-Hyung Hong (KAIST)
	A-08	A Study on the Effect of Nanoparticles on Crystallization Kinetics and Hydrolytic Degradation of PLA Composites	Meixian Li, Sung-Ha Kim, In-Joo Hwang (Seoul National Univ.), Jong-Kyoo Park (ADD), Woo-Il Lee (Seoul National Univ.)
	A-09	SWNT-coated, Conducting Panels with EMI Shielding Properties	Il-Woo Nam, Haeng-Ki Lee, Jun-Bo Sim, Sung-Min Choi (KAIST)
12:25~ 13:25	Lunch, Room CECO the first floor "SICDORAK"		
Nanocomposites III			Yeong-Bin Park (UNIST)
13:25~ 14:25	A-10	Influence of grafting carbon nanotubes on mechanical properties of T-glass fiber	Shinya Sato (Waseda Univ.), Kimiyoshi Naito (National Inst. for Materials Sci.), Hiroyuki Kawada (Waseda Univ.)
	A-11	Enhanced Mechanical Property of Carbon Nanotube/Ni Nanocomposites Fabricated by Molecular-Level Mixing and Direct Reduction Process	Kyung-Tae Kim (KIMS), Byung-Kyu Lim, Soon-Hyung Hong (KAIST)
	A-12	Interfacial Durability, electrochemical property and actuation mechanism of an CNT or ITO/PVDF Nanocomposites for Sensor and Actuator	Ga-Young Gu, Zuo-Jia Wang, Dong-Jun Kwon, Joung-Man Park (Gyeongsang National Univ.)
Joint I			Jin-Ho Choi (Gyeongsang National Univ.) Y. Narita (Hokkaido Univ.)
14:35~ 15:50	A-13	Functionalization of composite surface using in-mold surface preparation for enhancement of fracture toughness of bonded joint	Yuki Hikosaka (Tokyo Inst. of Tech), Ryosuke Matsuzaki (Tokyo Univ. of Sci.), Akira Todoroki, Yoshihiro Mizutani (Tokyo Inst. of Tech.)
	A-14	Stress Characteristic of Adhesive Joint for Wind Turbine Blade Web	Yeong-Mi Ji, Han-Sang Yu, Kyung-Seop Han (POSTECH)
	A-15	A Study on Failure Strength of Composite Key Joint	Kang-Woo Jeong, Yong-Bin Park, Jin-Ho Choi, Jin-Hwe Kweon (Gyeongsang National Univ.)
	A-16	Finite element analysis of Nomex honeycomb sandwich joints under pull-out loading	Khanh-Hung Nguyen, Jin-Hwe Kweon, Jin-Ho Choi (Gyeongsang National Univ.), Chang-Won Shul (ADD)
Joint II			Seung-Il Cha (KERI)
16:00~ 17:00	A-17	The effect of geometry of the bolt on the strength and damage mode of CFRP mechanical joints	Keita Hashimoto, Terutake Matsubara, Wen-Xue Wang, Yoshihiro Takao (Kyushu Univ.)
	A-18	Bonding and corrosion characteristics of aluminum adherends coated with the modified silane at the cryogenic temperature	Jin-Gyu Kim, Il-Beom Choi, Dai-Gil Lee (KAIST)
17:30~20:00	Banquet, Room 301, 302		



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9:20~9:50	Plenary Lecture Lecturer : Professor Hiroshi Suemasu (Sophia University) Title : Analytical Study on Low Compressive Strength of Composite Laminates with Impact damage	Byung-sun Kim (KIMS)	
Nov. 17, 2011, Room 605			
Time	ID	Title	Chairs, Authors
Green Composites			Jeong-il Song (Changwon National Univ.) H.Takagi (U of Tokushima)
10:00~ 11:15	B-01	Effect of anti-hydrolysis agent on mechanical performance of injection-molded PBS/bamboo green composites	Kazuya Ohkita (Kagawa Prefectural Ind.Tech. Center), Hitoshi Takagi, Antonio Norio Nakagaito (Univ. of Tokushima), Yeon-Hee Lee, Han-Ki Yoon (Dong-Eui U)
	B-02	Effect of silane and zein coupling agents on mechanical properties of lyocell fabric/polylactic acid composite	Denni Kurniawan (Dongguk Univ.), Jong-Rok Ha, Byung-Sun Kim (KIMS), Ho-Yong Lee, Joong-Yeon Lim (Dongguk Univ.)
	B-03	Aerogels obtained by freeze drying aqueous suspensions of microfibrillated cellulose	Hikaru Kondo, Antonio Norio Nakagaito, Hitoshi Takagi, Jitendra Kumar Pandey (Univ. of Tokushima)
	B-04	Mechanical properties of surface treatment effect of jute fiber reinforced composites	Gi-Beop Nam, Jeong-Myeong Byeon (Changwon National Univ.), Toru Fujii (Doshisha Univ.), Byung-Sun Kim (KIMS), Jung-il Song (Changwon National Univ.)
	B-05	Alternative process of cellulose nanofiber extraction from agricultural waste	Kiyoshi Nakano, Antonio Norio Nakagaito, Hitoshi Takagi, Jitendra Kumar Pandey (Tokushima Univ.)
Applications I			Jin-bong Kim (KIMS) Y.Yamaguchi (KYC-Japan)
11:25~ 12:25	B-06	Silicone Based Transparent Composites	Jun-Young Jang, Young-Seok Song (Dankook Univ.)
	B-07	Development of polymer/composite multi-layer porous material for osteochondral tissue engineering	Sung-hyun Hwang, Mitsugu Todo (Kyushu Univ.)
	B-08	Manufacturing and testing of radar absorbing wind blade sectional structure	Jin-bong Kim, Do-wan Lim (KIMS)
	B-09	Topics on advanced composites of aircrafts industries in Japan	Yasuhiro Yamaguchi (President, KYC-Japan)
12:25~ 13:25	Lunch, Room CECO the first floor "SICDORAK"		
Applications II			Haeng-Gi Lee (KAIST) M.Koyama (Tokyo U Sci.)
13:25~ 14:25	B-10	Review of Advanced Carbon Fiber Applications	Tae-Ho LEE (KISTI)
	B-11	Influences of microstructural anisotropy and hydrolysis on compressive fracture behavior of hydrostatic-pressure-extrusion-molded SCPLA/PLLA composite	Mototsugu Tanaka, Masayuki Mizutani (Kanazawa Inst. Tech), Kiriko Kato, Suong-Hyu Hyon (Kyoto Univ.), Masakazu Konda (BMG Inc), Masaki Hojo (Kyoto Univ.), Isao Kimpara (Kanagawa Inst. Tech)
	B-12	Nomex® Honeycomb Core Material Property Data	Rene Roy, Jin-Hwe Kweon, Jin-Ho Choi (Gyeongsang National Univ.), Chang-Won Shul (ADD)
	B-13	Consideration of the design guide for screw structure made of C/C composites	Masashi Koyama, Ryoichi Goda, Ayaka Iimura (Tokyo Univ. of Sci.), Hiroshi Hatta (JAXA), Hiroshi Fukuda (Tokyo Univ. of Sci.)
Processes			Sung-Ho Yoon (Kumoh National Inst. of Tech) R.Matsuzaki (Tokyo U Sci.)
14:35~ 15:50	B-14	Implication of fiber anisotropy on prediction of void content during RTM	Daigo Seto (Tokyo Inst. Tech), Ryosuke Matsuzaki (Tokyo Univ. of Sci.), Akira Todoroki, Yoshihiro Mizutani (Tokyo Inst. Tech)
	B-15	Experimental study on permeability for gelatin treated glass fiber	Sung-Woong Choi, Jeong U, Roh, Sung-Ha Kim (Seoul National Univ.), Hyeon-Min You (Korea University), Woo Il Lee (Seoul National Univ.)
	B-16	Control of resin flow using multifunctional interdigital electrode array film during a VaRTM process	Ryosuke Matsuzaki (Tokyo Univ. of Sci.), Seiji Kobayashi (Tokyo Tech), Akira Todoroki, Yoshihiro Mizutani
	B-17	Characterization of Mechanical and Thermal Analysis Properties of Carbon/Epoxy Composites Subjected to Salt Water Environments	Young Eun Hwang, Sung Ho Yoon (Kumoh National Inst. of Tech.)
	B-18	Mold-flow analysis and experiments of VaRTM	Hikaru Ozeki, Kazuhiro Sakata, Goichi Ben (Nihon Univ.)
Metal Matrix Composites			Woon-Bong Hwang (POSTECH) G.Sasaki (Hiroshima Univ.)
16:00~ 17:00	B-19	Influence of interfacial reactant on the strength and fracture behavior of Cf/Al composites	Moon-Hee Lee, Yong-Bum Choi, Kenjiro Sugio, Kazuhiro Matsugi, Gen Sasaki (Hiroshima Univ.)
	B-20	Measurement of Residual Stress on 6061 Aluminum/Al ₂ O ₃ Short-fiber Reinforced Composites by Nanoindentation	Sang-Guk Jeong, Kyung-Seok Oh, Kyung-Seop Han (POSTECH)
	B-21	Analysis of low pressure infiltration for molten aluminum to porous FeCrSi fiber	Gen Sasaki, Natsuko Nishimura, Yong-Bum Choi, Kenjiro Sugio, Kazuhiro Matsugi (Hiroshima Univ.)
	B-22	Development of intermetallic compound dispersed aluminum matrix composites with a new process	Y.B. Choi, S. Takiguchi, K. Matsugi, D. Sasaki (Hiroshima Univ.)
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Nov. 17, 2011, Room 606			
Time	ID	Title	Chairs, Authors
Performance I			Nak-Sam Choi (Hanyang Univ.) Masahito Ueda (Nihon Univ.)
10:00~ 11:15	C-01	Correlation of compressive strengths between a carbon fiber in matrix and unidirectional CFRP	Masahito Ueda, Tetsu Nishimura (Nihon Univ.)
	C-02	Inherent Property and Interfacial Evaluation of Carbon Fiber Reinforced Epoxy Composites by Micromechanical Test at Cryogenic Temperature	Dong-Jun Kwon, Zuo-Jia Wang, Ga-Young Gu (Gyeongsang National Univ.), Moon-Kwang Um (KIMS), Joung-Man Park (Gyeongsang National Univ.)
	C-03	Behavior of small fatigue cracks under cyclic torsion combined with static compression	A. Kusaba, K. Yanase and M. Endo (Fukuoka Univ.)
	C-04	Fracture Characterization of ZrO ₂ -DLC Plasma Coating Materials	Yan-Rong Wang, Yi-Qi Wang, Zhi-Peng Hui, Jung-Il Song (Changwon National Univ.)
	C-05	Effect of fiber/matrix interface properties on the depth of failure of CFRP cutting	S.C.Park (Univ. of Tokyo), M.Nishikawa (Kyoto Univ.), N.Takeda (Univ. of Tokyo), T.Okabe (Tohoku Univ.), M.Hojo (Kyoto Univ.)
Performance II			Jung-Hui Lee (Chonbuk National Univ.) Y. Takao (Kyushu Univ.)
11:25~ 12:25	C-06	Compressive strength of pre-stressed single carbon fiber in matrix	Tae-Kun Jeong, Masahito Ueda, Tetsu Nishimura (Nihon Univ.)
	C-07	The Prediction of Ballistic Limit for Gr/Ep Composite Laminates Based on the Quasi-Static Perforation Test	Won-Young You, In-Gul Kim, Hee-Jun Shin (Chungnam National Univ.), Jong-Heon Kim (ADD)
	C-08	A study on the ductility loss in metals by hydrogen	K. Matsuno, K. Yanase, H. Kim and H. Matsunaga (Fukuoka Univ.)
	C-09	Cryogenic strength of the insulation material and flat-wise sandwich specimens	Gi-Won Nam, Cheol-Won Kong, Yeong-Moo Yi, Young-Soon Jang (KARI)
12:25~ 13:25	Lunch, Room CECO the first floor "SICDORAK"		
Performance III			Sang-gwan Lee (KIMS) Toru Fujii (Doshisha U)
13:25~ 14:25	C-10	Fracture mode and design method for the adhesive repair CFRP patch for damaged CFRP structural panels	Masaya Tanaka, Shunichiro Nakamura (Daiichi Inst. Tech), Yoshihiro Takao, Terutake Matsubara, Wen-Xue Wang (Kyushu Univ.)
	C-11	Electrical Energy of a Cantilevered Beam Consists of Topologically Optimized PVDF Piezoelectric Material and Aluminum Layers	Cheol Kim, Hinan Cui (Kyungpook National Univ.)
	C-12	Modification of CFRP pipe with MFC (Micro Fibrillated Cellulose) to improve fatigue life under cyclic impact loading	Ryohei Aoyama, Kazuya Okubo, Toru Fujii (Doshisha U)
	C-13	The Energy absorption profile for Spacecraft first bumper made of Carbon-Epoxy composite under hypervelocity impacts in Low Earth Orbit environment	Abrar-Ul-Haq Baluch, Yurim Park, Chun-Gon Kim, Jin-Bum Moon (KAIST)
Performance IV			Seon-Gyeong Kim (SeoulTech) H. Kawada (Waseda Univ.)
14:35~ 15:50	C-14	On Deflection of Delamination Crack under Mixed Mode II and III Fracture Conditions	Hiroshi Suemasu, Atsushi Kondo (Sophia Univ.) and Yuichiro Aoki (JPEA)
	C-15	Design of a Composite-Antenna-Structures for Improved Electrical Performance Characteristics	Dong-Seob Kim, Jin-Yul Kim, Weesang Park, Woon-bong Hwang (POSTECH)
	C-16	Improvement of fatigue life of plain-woven CFRP enhanced with novoloid fibers	Wataru Okabe, Kazuya Okubo, Toru Fujii (Doshisha Univ.), Toshiya Tanioka (Gunsei Chemical Industry)
	C-17	Static Bending and Impact Behavior of Dual Band Composite-Surface-Antenna	Jin-Yul Kim, Dong-Sik Shin, Dong-Seob Kim, Wee-Sang Park, Woon-Bong Hwang (POSTECH)
	C-18	Strain-rate dependency on mechanical properties of glass fiber reinforced plastics under impact loading	Naoki Inoue (Waseda Univ.), Norihiro Taniguchi, Tsuyoshi Nishiwaki (ASICS), Norio Hirayama, Koichi Nakamura (NittoBoseki Co.,Ltd.), Hiroyuki Kawada (Waseda Univ.)
Test & Evaluation			Jin-Hwe Kweon (Gyeongsang National Univ.) M.Nakata (Kanazawa Inst. of Tech)
16:00~ 17:00	C-19	Residual tensile strength of organic mono-filaments after kink band formation	H. Saito, S. Inaba, M. Nakahashi, I. Kimpara (Kanawaza Inst. Tech), T. Katayama (Kuraray Co. Ltd.)
	C-20	Efficiency comparison for adhesive bonded solar-powered UAV structures	Choong-Kwang Lee (Chonbuk National Univ.), Han-Sang Kim (KIST)
	C-21	Advanced accelerated testing methodology for life prediction of CFRP	Masayuki Nakada and Yasushi Miyano (Kanazawa Inst. of Tech)
	C-22	Acoustic Emission Measurement of Dental Composite Restoration using Direct Sensor Attachment	Ja-Uk Gu, Nak-Sam Choi (Hanyang Univ.)
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Nov. 17, 2011, Room 607			
Time	ID	Title	Chairs, Authors
Monitoring I			Il-Beom Kwon (KRISS) N Watanabe (Tokyo Metropolitan Univ.)
10:00~ 11:15	D-01	Full-field detection of impact damage in CFRP aircraft by electric heating	Yoshiro Suzuki, Akira Todoroki, Yoshihiro Mizutani (Tokyo Inst. Tech), Ryosuke Matsuzaki (Tokyo Univ. Sci)
	D-02	Polymer-Impregnated Carbon Nanomaterial Hybrid Sheets for Strain Sensing	Sang-Ha Hwang, Young-Bin Park (UNIST)
	D-03	Damage monitoring of thick CFRP using electrical resistance change method considering dent effect	Y.Shimazu, A.Todoroki, Y.Mizutani (Tokyo Inst. Tech), Ryosuke Matsuzaki (Tokyo Univ. Sci)
Design & Analysis I			Heung-Jae Jeon (Yonsei Univ.) A.Todoroki (Tokyo Inst. Tech)
11:25~ 12:25	D-04	Multiscale modeling of the transverse tensile failure in unidirectional carbon fiber reinforced composites	H. Iimura, T.Okabe (Tohoku Univ.)
	D-05	Study on Aerodynamic and Structural Design of High Efficiency and Lightweight Composite Blades of 1MW Class HAWT	Min-Woong Kim, Chang-Duk Kong, Hyun-Bum Park (Chosun Univ.)
	D-06	Electric current analysis of CFRP using perfect fluid potential flow	A.Todoroki (Tokyo Inst. Tech)
	D-07	Simultaneous optimization of surface shape and lay-up design for vibration of laminated composite shallow shells	Yoshihiro Narita, Shinya Honda, Takeru Kato (Hokkaido Univ.), Daisuke Narita (Hokkaido Automotive College)
12:25~ 13:25	Lunch, Room CECO the first floor "SICDORAK"		
Design & Analysis II			Cheol Kim (Kyungpook National Univ.) T.Okabe (Tohoku Univ.)
13:25~ 14:25	D-08	Numerical modeling of the tensile failure in discontinuous fiber-reinforced composites	T. Sasayama, T. Okabe (Tohoku Univ.)
	D-09	Analysis of effective elastic modulus for multiphased hybrid composites	Doo-Jin Lee, Hwa-Jin Oh, Jae-Ryoun Youn (Seoul National Univ.), Young-Seok Song (Dankook Univ.)
	D-10	Stacking sequence design exploration of composite wing structure by using self - organizing map	Hyun-Jin Shin (Toky Inst.Tech), Yoshiyasu Hirano (JAXA), Akira Todoroki (Tokyo Inst. Tech)
	D-11	A unit cell approach of finite element calculation of mechanical properties of plain weave composites	Yi-Qi Wang (Changwon National Univ.), Joon-Hyung Byun, Byung-Sun Kim (KIMS), Jung-Il Song (Changwon National Univ.)
Monitoring II			Joon-Hyung Byun (KIMS) Yoshiyasu Hirano (JAXA)
14:35~ 15:50	D-12	Monitoring of the Structural Dimensional Changes based on the Strain data using FBG sensors	Hong-Il Kim, Jae-San Yoon, Jae-Hung Han (KAIST)
	D-13	Damage observation of CFRP Laminates with a fastener subjected to lightning current	Yoshiyasu Hirano (JAXA), Cornelis Reurings (TU Delft), Yutaka Iwahori (JAXA)
	D-14	Damage characterization of textile composites using carbon nanotube-based in situ sensing	Won-Jin Na, Woong-Ryeol Yu (Seoul National Univ.)
	D-15	Damage detection of large CFRP structures using electrical pulse wave	Hiroumi Kurokawa, Akira Todoroki, Yoshihiro Mizutani (Tokyo Inst. Tech), Ryosuke Matsuzaki (Tokyo Univ. of Sci.)
	D-16	Debonding Monitoring of Adhesive Layers in Composites using Embedded Fiber Bragg Grating sensors	Sang-Woo Kim, Seung-Jae Yoo, Sung-In Cho, In Lee (KAIST), Il-bum Kwon (Korea Research Inst. of Standards and Sci.)
Design & Analysis III			In-Gul Kim (Chungnam National Univ.) Goichi Ben (Nihon Univ.)
16:00~ 17:00	D-17	A study on optimum structural design of CFRP isogrid cylindrical shells	Takashi Suzuki, Kazuhiro Sakata, Goichi Ben (Nihon Univ.)
	D-18	A Study on Modified Reliability-Based Optimization Method for Composite Structures	Seok-Je Lee, In-Gul Kim (Chungnam National Univ.)
	D-19	Formulation of 3-D homogenization method with relieving periodic condition	Naoyuki Watanabe, Satoshi Takahashi, Arief Yudhanto, Ridlo Nasution (TMU)
	D-20	Composite damage model based on continuum damage mechanics and their application to impact analysis of composite structures	Eun-Ho Kim, Mi-Sun Rim, In Lee (KAIST), Tae-Kyung Hwang (ADD)
17:30~20:00	Banquet, Room 301, 302		





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Roadmap



Transportation

Air Transportation

Incheon Int'l Airport → Kimhae(Busan) Airport (50min.) Kimhae(Busan) Airport → CECO (30~40 min.)	There are about 5 flights per day.
Kimpo Int'l Airport → Kimhae(Busan) Airport (50min.) Kimhae(Busan) Airport → CECO (30~40 min.)	There are about 30 flights per day with 30~40 minute intervals.

* Time Schedule of Airport Limousine to and from CECO

Jinhae → CECO → Changwon Hotel → Namsandong → Gimhae Airport					Gimhae Airport → Namsandong → Changwon Hotel → CECO				
08:00	08:20	08:30	08:40	09:10	06:35	07:05	07:10	07:20	07:40
-	11:20	11:30	11:40	12:10	09:20	09:50	10:00	10:10	-
-	14:00	14:10	14:20	14:50	12:20	12:50	13:00	13:10	-
16:30	16:50	17:00	17:10	17:40	15:00	15:30	15:40	15:50	16:10
-	-	-	-	-	18:20	18:50	-	-	-

- Schedule above is subject to change.

Changwon Bus Terminal stop has more limousines with 20 minute intervals.
(Bus Terminal is 5 minute drive away from CECO)

Train

✓ Seoul → Changwon : 2hour 50minutes

Express Bus

✓ Seoul(Gangnam Express Terminal or East Seoul Bus Terminal) → Changwon(5hr)

✓ Busan → Changwon(45 min~1 hr)

(20 minute intervals from Sasang, Haeundae terminals)

Registration

Category	Pre-Registration	Post-Registration
Student-Member	70,000	90,000
Student-Non member	100,000	120,000
Member	120,000	140,000
Non member	150,000	170,000