

**Prof. Chul H. Jo**  
**Ph.D - Ocean Engineering**  
**Inha University, Incheon, Korea**

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home page) <http://oelab.naoe.inha.ac.kr>

**Education:** Ph.D in Ocean Engineering, Texas A&M University USA, 1986.9-1991.8  
M.E. in Ocean Engineering, Steven Institute of Technology USA, 1984.1-1985.5  
B.S. Inha University Korea, 1980.3-1984.2

**Research Area :** Ocean energy (tidal current power) : turbine design, system integration technology  
Offshore structure design -Subsea pipeline, FPSO/Buoy Mooring, Riser  
Offshore structure installation-pipeline, float-over, load-out, lifting, transportation

**Award:**

Certificate of appreciation, the 70<sup>th</sup> anniversary of the police day(2015.10.21)  
Excellent paper award, AFORE 2015(2015.11.06)  
Certificate of appreciation, AWTEC(2014.07.31)  
Excellent Paper Award, AFORE 2013 (2013.11)  
Excellent Professor Award, Inha University, (2012)  
Excellent Professor Award, Inha University Korea, No.2011-1213 (2011)  
Excellent Paper Award, Korean Society for New and Renewable Energy (2011.5)  
Contribution Award in Ocean renewable energy, Incheon City Mayor, No. 3218 (2010. 11)  
Appreciation Award, Ocean plant design committee (2009.11)  
Excellent Paper Award, Korean Society of Ocean Engineers, No 2009-38 (2009. 10)  
Excellent Paper Award, Korean Society for New and Renewable Energy (2009.6)  
Appreciation Award, Korea Research Institute for Education and Training, No. 01-1659 (2004)  
Appreciation Award, Korea Gas Corporation. No. 62002-3031 (1995)  
Ocean Engineering Scholarship, D. Michael Hughes (1989-1991)

**Society:**

|   |                                      |
|---|--------------------------------------|
| AWTEC (Asian Wave and Tidal Energy Conference)                  | : 2012.1-present (Asian Chair)       |
| SNAK (Society of Naval Architecture of Korea)                   | : 2011.6-present (TFT member)        |
| KSSC(Korean Society of Steel construction)                      | : 2009.6-present (member)            |
| KSNRE (Korea Society for New and Renewable Energy)              | : 2008.-present (member, OC)         |
| Coast Association of Korea                                      | : 2007.1-present (director)          |
| COEC (Coastal and Ocean Engineering Committee)                  | : 2004-present (director)            |
| KWRA(Korea Water Resources Association)                         | : 2002.1-present(member)             |
| KSCE (Korean Society of Civil Engineers)                        | : 1998.1-present (member)            |
| KSCOE (Korean Society of Costal and Ocean Engineering)          | : 1997.1-present (member)            |
| KSOE (Korea Society of Ocean Engineers)                         | : 1987.3-present (Vice President )   |
| PAAMES, AMEC  | : 2012.1-2013.12 (Program Committee) |
| AFORE(Asia Pacific Forum on Renewable Energy)                   | : 2011.5-2011.11(Program Committee)  |
| AFORE(Asia Pacific Forum on Renewable Energy)                   | : 2013.1-2013.11(Program Chairman)   |
| PAAMES  | : 2009.1-2010.12 (IPC member)        |
| Society of Offshore Structure Research                          | : 2008.1-2009.11 (vice president)    |
| KSES(Korean Solar Energy Society)                               | : 2006.1-2008. 12 (director)         |
| CSEIK (Computational Structural Engineering Institute of Korea) | : 1998.5-2003.2 (senior editor)      |
| ISOPE (International Society of Offshore and Polar Engineers)   | : 1991.1-2011 (TPC, LOC)             |
| SNAK (Society of Naval Architecture of Korea)                   | : 1983.3-2005.12 (senior member)     |

**Teaching and Industry Experience:**

- **Inha University (1997. 3 - present) : Professor**

- Design of offshore structure : offshore jacket, deck, pile, international codes & standards
- Subsea pipeline design : offshore/subsea pipeline design, installation, test, repair
- Introduction of ocean system : various offshore structures and ocean system
- Ocean energy : tidal current, wave, barrage, thermal, other ocean energies
- Ocean pollution control : cause of ocean pollution, protection and recovery method
- Ocean engineering lab : wave, current, floating body stability, wave/structure interaction
- Feasibility of ocean energy : feasibility study and analysis of ocean energy field development
- Ocean engineering : riser/pipeline design, offshore structure installation engineering
- Ocean transportation system : various transportation methods and stability during transportation
- Information society and computer : window, word, excel, power point and Hanguel software
- Large structure construction : large offshore system and construction methods
- Creative engineering design : creative engineering method, design and construction of device
- Introduction of computer : Fortran language and programing capability

- **Jeju University (2006.3-2006.8) : Exchange Professor**

- Design of ocean structure : offshore jacket, deck, pile, international codes & standards

- **Ulsan University (1996. 9-1997.2) : Invited Lecturer**

- Ocean pollution control : cause of ocean pollution, protection and recovery method, effects on marine life, pollution control method, law and regulations

- **Texas A&M University (1989-1991) : TA and RA**

- Ocean engineering (RA): Arctic scouring analysis, SPM dynamic analysis, ice fracture mechanics, ice forces on ocean structures, pipeline scouring due to current and wave, wave force on curved seawall, etc.
- Fluid dynamics and Ocean Engineering (TA) : fluid dynamics and ocean engineering lab for undergraduate course- fluid theories, data acquisition system, acoustics, wave force on structures, random wave analysis
- Concrete lab (TA) : concrete structure experiment for undergraduate course

- **Hyundai Heavy Industries (1992-1997) : Department Head-Offshore Structure Installation Engineering**

- Offshore structure installation engineering : jacket lifting, pile driving, transportation, load-out, float-over
- Pipeline installation engineering: barge modification, stinger, normal lay, shore approach
- Technical marketing support : technical support to various offshore structure installation projects
- Project manager : ARCO Yacheng process platform installation project PM
- Project engineer : Vietnam pipeline projects, India pipeline projects, Thailand pipeline and terminal project

- **INTEC Engineering Inc., Houston, USA (1991-1992) : Project engineer**

- Mooring system analysis, various pipeline projects, Arctic structure design, riser design, FPSO dynamic analysis, etc.

**Exchange Research Experience**

- Korea delegation for Italian Ocean Energy, Napoli University (2013.4)
- LeHarve University, France (2012.7)
- Strathclyde University, UK (2012.5)
- LeHarve University, France (2011.8)
- Delft Technical University, Holland (2010. 12)
- Strathclyde University, UK (2010. 8)
- LeHavre University, France (2010. 8)
- Strathclyde University, Glasgow, U.K. (2004.7-2004.8)
- Le Havre University, France (2004.8)
- Jeju University, Korea (2006. 3-2006.8)

**News Paper, TV, Magazine:**

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|---|--------------|--------------|
| “the first tidal current power at low current speed using duct” | Incheon News | Nov.3. 2015  |
| “Science class in university on weekend”                        | Dong-A News  | Apr.8. 2014  |
| “Incheon ocean energy MECA project”                             | SBS News,    | Feb. 2. 2012 |
| “Status of tidal current power technologies and prospective”    | KISTEP,      | August, 2011 |

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|--|---------------------------|----------------|
| “Energy of flowing water”  | Energy Economy Newspaper, | Nov. 30. 2011  |
| “Gathering power to improve Ongjingun’s life .”  | Incheon Newspaper,        | Dec. 8. 2010   |
| “Tidal current energy international forum ”,   | Energy Economy Newspaper, | Dec. 1. 2010   |
| “Unlimited clean energy-international movement toward ocean energy”, SK energy magazine, |                           | August, 2010   |
| “Current characteristic in west coastal area”,   | KBS 9pm News,             | March 31, 2010 |
| “Strong current and floating ship”,  | Associated Press,         | March 29, 2010 |
| “Presence of tidal current power in Korea ocean energy”                                  | Power Industry Newspaper  | March 15, 2010 |
| “Korean ocean energy- present status of tidal current energy ”                           | Hankyoreh Press           | March 14, 2010 |
| “Incheon tidal current power plat development”,  | YTN News,                 | April 29, 2009 |
| “Tidal current power in Kyongnam”,   | Jinju MBC Radio,          | April 20, 2009 |
| “Tidal current power prospective in Daebang straight”                                    | Jinju MBC Radio,          | Feb. 10, 2009  |
| “Debate on new and renewable energies”   | Kyonghang Newspaper,      | May 29, 2009   |
| “Introduction of ocean energy book”,   | Kyungin Newspaper,        | Aug. 31, 2008  |
| “Introduction of ocean energy book”,   | SEA Magazine,             | Nov., 2008     |
| “New book-Ocean energy”  | Energy Economy Newspaper, | Sept. 24, 2008 |
| “Development of multi-bundle pipeline installation”                                      | Kyongin Newspaper,        | Aug. 31, 1998  |
| “Introduction of multi-bundle pipeline installation”                                     | Incheon Newspaper,        | Aug. 27, 1998  |

### **Text Book and Other Publication:**

|   |                           |        |
|---|---------------------------|--------|
| “Ocean energy engineering”                                    | Dasom Publisher           | 2016/3 |
| “Coastal offshore engineering”                                | Chungmunkak publisher     | 2015/8 |
| “Renewable energy encyclopedia : tidal current energy.”       | Tree and forest Publisher | 2013/4 |
| “Tidal current energy trend and future development strategy.” | KISTEP                    | 2011/9 |
| “Ocean Energy ” (Review)                                      | Kyongki Sea-Grant         | 2011/1 |
| “Introduction of ocean energy ”                               | Daesun Publisher          | 2008/8 |
| “Floating offshore structures”                                | KSOE                      | 2003/1 |
| “Subsea pipeline design”                                      | Daesun Publisher          | 2001/8 |
| “Mega-float offshore structure”                               | Daesun Publisher          | 2001/1 |
| “Design of ship outfitting equipment ”                        | Ministry of Education     | 2003/3 |
| "Offshore vortex shedding design guideline"                   | Intec Engineering         | 1992/3 |
| "First Ice resistance design guideline"                       | Intec Engineering         | 1992/1 |
| "Ocean engineering experiment lecture notebook"               | Texas A&M University      | 1990/2 |

### **Chair:**

|   |                                  |                      |          |
|---|----------------------------------|----------------------|----------|
| - Global green hub Korea-ocean energy program | Chair                            | KOTRA                | 2015. 09 |
| - Tidal ; Device development & testing 3      | Co-Chairman                      | EWTEC                | 2015. 09 |
| - Design, Production                          | Chair                            | KAOSTS               | 2015. 05 |
| - GGHK 2014 ocean energy seminar              | Chair                            | GGHK 2014            | 2014. 05 |
| - F2 coast/offshore session                   | Chair                            | KSOE                 | 2014. 05 |
| - AFORE Organizing Committee                  | Chair                            | AFORE                | 2013. 11 |
| - Low Carbon Technology                       | Chair                            | AFORE                | 2013. 11 |
| - Korean New&Renewable Energy2013             | Chair                            | KSNRE                | 2013. 11 |
| - Process Design/Analysis                     | Chair                            | AMPD                 | 2013. 06 |
| - Coast/Ocean Session                         | Chair                            | KSOE                 | 2013. 05 |
| - Wave/Fluid Session                          | Chair                            | KCSOE                | 2013. 05 |
| - AFORE                                       | Chair                            | AFORE                | 2013. 04 |
| - GGHK 2013-Ocean energy Workshkp             | Chair                            | KOTEA                | 2013. 04 |
| - PAAME                                       | International Program Committee, |                      | 2012. 12 |
| - AWTEC                                       | Chair                            | AWTEC                | 2012. 11 |
| - AFORE                                       | Program Committee, AFORE         |                      | 2012. 11 |
| - ROE Session A                               | Chair,                           | AMEC(PAAMES), Taiwan | 2012. 12 |
| - SPEEDAM WB2                                 | Chair,                           | SPEEDAM, Italy       | 2012. 06 |
| - Ocean energy expert Forum                   | Discussant                       | Incheon city         | 2012. 06 |
| - Marine Energy II                            | Chair,                           | APAC-2011            | 2011. 12 |
| - APAC ocean energy forum                     | Committee,                       | APAC-2011            | 2011. 12 |
| - Ocean Energy Session                        | Chair,                           | AFORE-2011           | 2011. 11 |
| - Ocean energy session                        | Chair                            | KSNRE                | 2011. 11 |
| - International tidal current energy Forum    | Chair                            | Incheon city         | 2011. 11 |
| - Fluid session C-3                           | Chair                            | KSOE                 | 2011. 10 |

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|--|-----------|-----------------|----------------|
| - Motion & loads                                       | Chair     | TEAM-2011       | 2011.09        |
| - UK/Korea Ocean Energy Workshop                       | Chair     | EWTEC-2011      | 2011.09        |
| - VI : Marine current converter testing                | Chair     | EWTEC-2011      | 2011.09        |
| - International tidal current energy development forum | Chair     | Incheon city    | 2011.11        |
| - Asia Pacific New Energy Forum                        | IAC       | AFORE           | 2011.05-11     |
| - Ocean Energy   | Chair     | KSNRE           | 2011.05        |
| - Conference organization committee                    | Committee | KSNRE           | 2011.02        |
| - LOC  | Committee | PACOMS          | 2010.11        |
| - ISLCT 2010   | PC        | KSNRE           | 2010.11        |
| - Subsea environment                                   | Chair     | KSOE            | 2010.10        |
| - Green energy forum                                   | Chair     | KFMA            | 2010.12        |
| - International tidal current forum                    | Chair     | Incheon city    | 2010.11        |
| - Ocean engineering                                    | Chair     | KSOE            | 2010.06        |
| - International ocean energy forum                     | Chair     | Inha University | 2010.05        |
| - Energy-session #3                                    | Chair     | EAWOMEN         | 2009.11        |
| - Port and ocean                                       | Chair     | KCEA            | 2009.10        |
| - Reliability & Safety III                             | Chair     | ISOPE           | 2009.07        |
| - Ocean resources & environment                        | Chair     | KSOE            | 2009.06        |
| - Ocean resources & environment                        | Chair     | KSOE            | 2008.10        |
| - 2008 Korea & Japan Ocean Energy Symposium            | Chair     | KFMA            | 2008.8         |
| - Renewable Energy-Session 85                          | Chair     | ISOPE           | 2008.7         |
| - Ocean resources & environment                        | Chair     | KSOE            | 2008.5         |
| - Special Session                                      | Chair     | KSOE            | 2007.11        |
| - Marine Renewable Energy                              | Chair     | AICFM           | 2007.10        |
| - Reliability & Safety III                             | Chair     | ISOPE           | 2007.7         |
| - Structure Design                                     | Chair     | KSOE            | 2006.11        |
| - Ocean Energy   | Chair     | KSES            | 2006.4         |
| - KSOE 20th Anniversary                                | LOC       | KSOE            | 2005.1-2006.11 |
| - Structure Design                                     | Chair     | KSOE            | 2006.5         |
| - Hydro XIV  | Chair     | ISOPE           | 2006.5         |
| - Offshore Systems                                     | Chair     | ISOPE           | 2005.6         |
| - Pipelines/Risers/Mooring I                           | Chair     | ISOPE           | 2004.5         |
| - ISOPE-2005   | LOC       | ISOPE           | 2003.6-2005.5  |
| - Risers/Cables/Mooring IV                             | Chair     | ISOPE           | 2003.5         |
| - Ocean and Coastal II-2                               | Chair     | KSOE            | 2002.10        |
| - Pipelines II   | Chair     | ISOPE           | 2002.5         |
| - Ocean and Fluid III-1                                | Chair     | KSOE            | 2002.5         |
| - Ocean II   | Chair     | KSOE            | 2001.10        |
| - Pipelines III  | Chair     | ISOPE           | 2001.6         |
| - Offshore and Fluid III-2                             | Chair     | KSOE            | 2001.5         |
| - Ocean and Fluid II                                   | Chair     | KSOE            | 2001.5         |
| - Structure Design I                                   | Chair     | CSEIK           | 2001.4         |
| - Offshore structure I                                 | Chair     | KSOE            | 2000.6         |
| - Pipelines II   | Chair     | ISOPE           | 2000.5         |
| - Pipelines VI   | Chair     | ISOPE           | 1998.7-1999.6  |
| - Offshore Systems & Operations II                     | Chair     | ISOPE           | 1998.5         |
| - Offshore System II                                   | Chair     | ISOPE           | 1997.5         |

### Advisory Committee

|   |  |                 |
|---|--|-----------------|
| •Local construction technology reviewer | Incheon City                                     | 2016.01-2017.12 |
| •Coast management committee             | Incheon City                                     | 2015.10-2017.10 |
| •Chairman of Ocean parts                | AFORE  | 2015.03-2016.08 |
| •artificial fishing banks conference    | Incheon City                                     | 2015.03-2015.12 |
| •Korea Crime Science investigation      | KCSI   | 2015.06-2016.08 |
| • Working design supervisors            | FIRA   | 2015.01-2017.12 |
| • Korea racquetball committee           | KOC  | 2013.01-2017-12 |
| •Fire investigation                     | Incheon City                                     | 2013.08-2015.07 |
| •Ocean energy potential TFT             | Korean Institute of Energy Research              | 2013.04-2013.12 |
| •Construction of Incheon harbor office  | Ministry of Land, Transport and Maritime Affairs | 2012.08-2014.07 |

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|---|--|-----------------|
| •Review prior disaster effect                                   | Incheon City   | 2012.08-2014.08 |
| •Renewable energy R&D planning committee                        | Incheon City   | 2012.07-2013.06 |
| •Local Harbor and Coastal construction deliberate committee     | Incheon City   | 2012.01-2013.12 |
| •Capital region development Committee-Industrial support        | CRDC   | 2012.01-2013.12 |
| •Development ocean environmental technology                     | NSTC   | 2012.01-2012.12 |
| •Construction of Jeju-Jindo subsea power cable                  | KEPCO  | 2011.12-2012.08 |
| •Evaluation of of Eco island                                    | Incheon City   | 2011.11-2012.10 |
| •Review prior disaster effect Committee                         | Ongjingun  | 2011.10-2013.09 |
| •Renewable portfolio standard                                   | Ministry of Knowledge Economy                                    | 2011.07-2013.06 |
| • Korea Science and Technical Association Representative        | KSTAP  | 2011.02-present |
| •Green Certification Technical Committee                        | KISTEP   | 2011.02-2011.03 |
| •Civil Construction Evaluation Committee                        | Incheon City   | 2010.04-2011.12 |
| •Future Korea Ocean and Marine Future Forum                     | President Council  | 2010.03-2012.02 |
| •HDVC Jeju-Jindo Subsea cable                                   | KEPCO  | 2009.12-2012.08 |
| •Presidential Council for Future and Vision Committee           | President Council  | 2009.10-2012.02 |
| •Renewable Energy Technical Committee                           | MKE/KISTEP   | 2009.02-present |
| •Metropolitan Economic Development Committee Advisory Committee |  | 2009.11-present |
| •Ganghwa Tidal Power Environmental Review committee             | Incheon City   | 2009.7-2010.5   |
| •IEC/TC114 (Ocean Energy) International Standard committee      | Ministry of Knowledge Economy                                    | 2009.3-present  |
| •ISO TC8 SC2 Marine Environmental Protection committee          | Ministry of Knowledge Economy                                    | 2009.6- present |
| •Yeosu City Harbor and Coastal committee                        | Yeosu City   | 2009.5-2011.5   |
| •DaeJon Regional Construction and Management Administration     | Ministry of Land, Transport, Maritime affairs                    | 2009.2-2010.1   |
| •Incheon City Development committee                             | Incheon City   | 2009.1-2011.1   |
| •Ocean Energy (IEC/TC114) committee                             | Technical standard society                                       | 2008.8-2009.12  |
| •Incheon Science Technology Promotion Plan committee            | Korea Evaluation Institute of Industrial Technology              | 2008.7-2008.12  |
| •National Institute of Marine Biological Resources committee    | Ministry of Land, Transport, Maritime affairs                    | 2008.7-2010.7   |
| •ISO TC67 Industrial Standard Committee                         | Ministry of Knowledge Economy                                    | 2008.6-2009.5   |
| •Ultra Program committee  | Ministry of Science and Technology                               | 2007.11-2008.12 |
| •Coastal water quality committee                                | KSCOE  | 2007.10-2008.5  |
| •Coastal Disaster Preparedness committee                        | KSCOE  | 2007.10-2008.5  |
| •Marina Development Basic Plan committee                        | Ministry of Ocean and Fishery                                    | 2007.10-2008.5  |
| •Design Advisory Committee                                      | Incheon Free Economic Zone Authority                             | 2007. 5-2009.3  |
| •Material technology development committee                      | Korea Materials & Components Industry Agency                     | 2007.3-2007.12  |
| •Industry Academic Cooperation Foundation committee             | Seoul Regional Office Small & Medium Business Administration     | 2007.3-2007.12  |
| •Renewable Energy committee – Ocean Part                        | Ministry of Knowledge Economy                                    | 2007.1-2008.2   |
| •New Technology Certification & Jangyongsil award committee     | Korea Industrial Technology Association                          | 2007.1-2007.12  |
| •Ocean Plant Training Roadmap committee                         | SNAK   | 2006. 6-2007.12 |
| •Curriculum Deliberation committee                              | Ministry of Education & Human Resources Development              | 2006. 6-2008.6  |
| •Next Generation of Floating Offshore Structure committee       | Korea Institute of Industrial Technology Evaluation and Planning | 2005. 9-2005.12 |
| •Port Tank Design Standard revision committee                   | Ministry of Ocean and Fishery                                    | 2004. 5-2005.12 |
| •KT mark Professional Member committee                          | Korea Industrial Technology Association                          | 2004. 3- 2012   |
| •National technical vision IV committee                         | Ministry of Science and Technology                               | 2002. 8-11      |
| •Offshore design advisory committee                             | Inchon city  | 2002. 3-present |
| •KS and Jangyongsil award committee                             | Ministry of Industry development                                 | 2002. 1-2012    |
| •Ship Building Environmental Fire committee                     | Technical standard society                                       | 2001.2.-2011    |
| •Offshore hotel design committee                                | Achiasas   | 2001. 1-2006    |
| •Offshore pipeline design committee                             | Korean Gas Company   | 2000.5-2001.12  |
| •Ocean/port evaluation committee                                | Ministry of construction and transportation                      | 2000. 3-2012    |

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| •Songdo new city committee             | Inchon city                   | 2000.3-2012    |
| •Industrial standard committee         | Technical standard society    | 2000. 2-2010t  |
| •Turn Key project evaluation committee | Inchon city                   | 2000. 1-2010   |
| •Offshore structure design committee   | Ministry of Ocean and Fishery | 1999.10-2012   |
| •Offshore oil development committee    | Korean Oil Company            | 1999.8-2005    |
| •New airport subsea pipeline committee | New airport company           | 1998.2-1998.10 |
| •Western gas pipeline committee        | Korean Gas Company            | 1998.11-1999.5 |
| •Sea Logistics planning committed      | Ministry of Ocean and Fishery | 1997.12-1998.5 |

### Performed Project

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|--|-----------------|
| “Optimized Leg Design and Development of Jack-up system for Wind Turbine Installation Vessel(WTIV) ”                         | 2014.10-2015.09 |
| “Primary technology development of semi-active vanning system and water sealing device for tidal converter moored to seabed” | 2015.10-2016.06 |
| “Development of eco-friendly SPM system with integrated control system operable up to maximum water depth 100meters”         | 2015.09-2016.08 |
| “Development of Product swivel and Hydro Swivel that prevent Oil leaking on one-point mooring offloading facility ”          | 2015.07-2016.06 |
| “Development of pipe line design construction and management technology in permafrost area”                                  | 2015.10-2016.06 |
| “manpower training program for ocean energy”   | 2015.09-2016.02 |
| “Flow analysis and optimal positioning on Tidal current power farm”  | 2015.07-2017.01 |
| “Development of Ocean energy resource evaluation technology and standardization method ”                                     | 2015.01-2015.10 |
| "Ocean energy graduate school support work"  | 2013.03-2014.02 |
| "Model experiment for multiple layer current power plant research"   | 2013.02-2013.11 |
| "Engineering college research support work"  | 2013.01-2013.03 |
| "Maintenance systems for the active vanning tidal current power device"  | 2011.11-2013.11 |
| "Developed complex power plant of offshore wind and tidal system"  | 2012.12-2013.11 |
| "Engineering college research support work"  | 2012.09-2013.05 |
| "Developed jack-up system and optimized leg of offshore wind power plant installed ship"                                     | 2012.10-2013.09 |
| "Participated Korea Territory Construction Technology Fair 2012"   | 2012.06-2012.06 |
| "Training ocean energy specialties work"   | 2013.02-2013.03 |
| "Training ocean energy specialties work"   | 2013.02-2013.03 |
| "Performance experiment of tidal turbine HAT type"   | 2013.02-2013.03 |
| "Information exchanging for tidal power plant complex Flow mapping"  | 2012.04-2012.11 |
| "Maintenance systems for the active vanning tidal current power device"  | 2011.11-2012.11 |
| "Developed complex power palant of offshore wind and tidal system"   | 2011.12-2012.11 |
| "Training ocean energy specialities work (responded finance)"  | 2011.03-2012.02 |
| "Training ocean energy specialities work (showing government, company's share )"   | 2011.03-2012.02 |
| "Information exchanging for tidal power plant complex Flow mapping"  | 2011.04-2012.03 |
| "Performance of horizontal axis tidal current turbine by blade configuration"  | 2011.03-2012.02 |
| "Considerd interference tidal power plant device HAT type"   | 2011.03-2012.02 |
| "Fatigue crack in large scale tubular joings offshore structure"   | 2011.03-2012.02 |
| "Detailed planning of energy technical development 2011"   | 2010.12-2011.02 |
| "Technology search of internal and external tidal energy and experiment VAT, HAT blade"                                      | 2010.10-2011.02 |
| "Feasibility study with complexd Hanyoung R&D"   | 2010.08-2010.11 |
| "Adaptability examination of Backryungdo tidal energy"   | 2010.07-2011.11 |
| "Analyzation of initial design for production riser flexibility"   | 2010.04-2010.11 |
| "Capable to apply complex ocean energy with Green Islnad"  | 2010.01-2010.12 |
| "Model experiment for multiple layer current power plant research"   | 2010.06-2011.12 |
| "Safety review of submarine cable HVDC Jindo and Jeju"   | 2010.01-2011.03 |
| "Feasibility study with tidal power plant complex Shinan"  | 2009.09-2010.11 |
| "Location environment to the yellow sea trade port for mobile havor application"   | 2009.09-2009.12 |
| "Training ocean energy specialities work"  | 2009.04-2014.02 |
| "Developed fixed tidal power plant HAT type, 300kw"  | 2009.06-2010.05 |
| "Initial study for making Green Island"  | 2009.05-2009.12 |
| "Feasibility study for making Green Island Incheon"  | 2009.03-2010.12 |
| "Analyzation of initial dynamic stability with bridge case movement"   | 2009.03-2012.02 |
| "Developed tidal power plant cosidered interference"   | 2009.03-2012.02 |
| "Surrounding shipyard influence for LNG unload system"   | 2010.01-2010.09 |
| "Feasibility study with tidal power plant complex Incheon"   | 2008.09-2009.04 |



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| "Development planning large tidal pier labor and landfast system"                             | 2008.09-2009.01 |
| "Fitting small tidal power plant for the yellow sea"  | 2008.05-2009.02 |
| "Research of offshore structural steel in installed subsea"                                   | 2008.06-2008.11 |
| "System development of tidal power plant in shallow water"                                    | 2008.02-2008.11 |
| "Development module of tidal power plant and drain power plant"                               | 2007.10-2008.05 |
| "Concept design for floating offshore downside"   | 2007.09-2008.02 |
| "Analysis of riser for diverse sea environment"   | 2006.11-2008.01 |
| "Development technology and feasibility study tidal power plant"                              | 2006.12-2008.11 |
| "System development of high efficiency floating tidal power plant"                            | 2006.12-2009.11 |
| "System development of current in Incheon and the yellow sea"                                 | 2006.01-2006.12 |
| "Consulting for optimization SK pipe line at Ulsan harbor"                                    | 2006.03-2006.09 |
| "Using floating offshore structure, development construction skill for eco marina facilities" | 2004.09-2005.08 |
| "Research of hybrid tidal power plant"  | 2005.07-2006.02 |
| "Analyzed trend of technology about offshore plant and structural steel decision flow"        | 2005.01-2005.06 |
| "Analysis of installation with Keoka bridge caisson, topside and pier"                        | 2005.03-2005.05 |
| "Designing sea outfall in Noksan industrial complex"  | 2004.08-2005.02 |
| "Consulting for construction of ocean SK buoy and subsea pipe"                                | 2004.08-2005.07 |
| "Consulting for design of ocean SK buoy and subsea pipe"                                      | 2004.01-2004.06 |
| "Analyzed trend of technology about offshore plant and structural steel decision flow"        | 2003.09-2004.08 |
| "Consideration of HAT type tidal power plant efficiency"                                      | 2003.03-2004.02 |
| "Practical floating harbor"   | 2003.03-2004.02 |
| "Build system for process control of Saemangeum reclamation project"                          | 2003.06-2003.12 |
| "Development of advanced floodgate winch"   | 2002.08-2003.07 |
| "Technology of DGPS for control ship position"  | 2002.03-2003.02 |
| "Practical open harbor"   | 2002.03-2003.02 |
| "Control positioning of ship and offshore working ship using DGPS"                            | 2001.10-2003.09 |
| "Development downside module structure for tidal power plant"                                 | 2001.03-2002.02 |
| "Examined feasibility study of subsea pipeline at Irkutsk"                                    | 2001.10-2002.02 |
| "Development of dynamic analysis about floating mooring system"                               | 2001.03-2002.02 |
| "Study introduction plan of floating terminal"  | 2001.10-2002.02 |
| "Examination ring shaped pipeline network at capital territory and megalopolis"               | 2000.08-2001.10 |
| "Development of subsea supporting structure in rotation-vibration"                            | 2000.05-2001.04 |
| "Development guide line of offshore structure construction"                                   | 1999.06-2000.06 |
| "Designing concept and construction of subsea temporary pipe line at Masan"                   | 1999.10-1999.12 |
| "Designing construction of sea outfall of Yeongjongdo"  | 1999.08-1999.09 |
| "Development construction subsea main pipe line technology at the yellow sea"                 | 1998.06-1998.08 |
| "Development S/W of dynamic mooring system"   | 1998.11-2000.10 |
| "Designing and development of water pipe, gas pipe and oil pipe"                              | 1998.01-1998.05 |
| "Development guide line of offshore structure and subsea pipe line"                           | 1998.03-2000.02 |
| "Construction technology of bundle subsea pipe line"  | 1998.06-1999.05 |
| "Construction engineering of subsea oil pipe line at Yeongjongdo"                             | 1997.09-1997.11 |
| "Consideration subsea pipeline thermal expansion analysis"                                    | 1997.09-1998.08 |
| "Development multiple axis rotation grill"  | 1997.07-1998.06 |
| "Study creating ocean complexed terminal at the northern yellow sea"                          | 1997.09-1999.02 |
| "Subsea pipeline thermal expansion analysis"  | 1997.05-1998.04 |

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| "Hengam subsea pipeline design"   | 2012.08 |
| "S-oil subsea pipeline and SPM system design review"  | 2012.05 |
| "Nakdong river subsea pipeline design and stinger design"                                   | 2011.03 |
| "Fatigue crack in large-scale tubular joint for offshore structures"                        | 2012.02 |
| "Hybrid ocean energy system development"  | 2012.11 |
| "Active tidal current power device M/O system development"                                  | 2013.11 |
| "Evaluation of LNG loading facilities influenced by shipyard around Tong-Yong LNG Terminal" | 2010.09 |
| "Korea/UK joint Ocean Energy R&D feasibility study"   | 2010.11 |
| "Basic design for offshore production flexible riser"                                       | 2010.11 |
| "Multi ocean energy for green island"   | 2010.12 |
| "Multi-layer tidal current power experiment"  | 2011.12 |
| "Stability study for Jindo-Jeju HVDC subsea cable"  | 2011.03 |
| "Shinan tidal current power farm feasibility study"   | 2010.11 |
| "Environmental feasibility study for the application for mobile harbor"                     | 2009.12 |
| "Human development project for ocean energy expert"   | 2014.02 |

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| “Development for 300KW HAT tidal current device”   | 2010.05 |
| “Initial study for Green Island feasibility”   | 2009.12 |
| “Incheon Green Island feasibility study”   | 2009.12 |
| “Dynamic stability analysis for ocean bridge caisson”  | 2010.02 |
| “Multi HAT tidal current device development considering interaction effect”                  | 2012.02 |
| “Feasibility study for incheon tidal current power farm”                                     | 2009.04 |
| “Berthing and trestle development in high tidal region”                                      | 2009.01 |
| “Small scale tidal current power device development for islands”                             | 2009.02 |
| “Ocean material characteristic for subsea offshore structure”                                | 2008.11 |
| “Shallow module tidal current power system development”                                      | 2008.11 |
| “Development of module tidal current device in cooling water weir”                           | 2008.05 |
| “River Floating Submerged Structure Design”  | 2008.02 |
| “Dynamic Analysis of flexible riser according to the marine environment”                     | 2007.12 |
| “Development of Appropriate Tidal Current Power technology in Incheon and Yellow sea region” | 2007.1  |
| “Research for Route Optimization of SK Offshore Pipeline at Ulsan port”                      | 2006.9  |
| “Next Generation Floating LNG Terminal Engineering”  | 2006.4  |
| “Next Generation Floating Offshore Structure”  | 2005.12 |
| “Practical Application and design of Floating Port”  | 2005.6  |
| “Materials optimization & Technical Trend Analysis for Offshore Plant/Structure”             | 2005.6  |
| “Offshore pipeline pulling method stability analysis of A-San subsea pipeline”               | 2005.4  |
| “Equipment for Practical Use of Floating Port”   | 2005.2  |
| “Geoga-Bridge Pier, Caisson, Upper Structure Installation Analysis”                          | 2005.4  |
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| “Project Advisory for SK#2 Ocean Buoy & Offshore Pipeline”                                   | 2004.1  |
| “Offshore positioning device development with DGPS technology”                               | 2003.9  |
| “Offshore caisson lift analysis”   | 2003.6  |
| “Open port application”  | 2003.6  |
| “Subsea structure design for current power generation system”                                | 2002.2  |
| “Feasibility study on Irukuch offshore gas pipeline”   | 2002.2  |
| “Dynamic behavior of floating ocean mooring system”  | 2002.2  |
| “Study of floating offshore terminal application”  | 2002.2  |
| “Design review of Metropolitan supply subsea gas pipeline belt line”                         | 2001.10 |
| “Ocean support structure design for rotating device”   | 2001.4  |
| “Design guideline for offshore structure engineering and development of S/W Program”         | 2000.4  |
| “Design guideline for offshore structure installation engineering”                           | 2000.2  |
| “Offshore pipeline installation engineering”   | 1999.11 |
| “Offshore pipeline installation procedure”   | 1999.10 |
| “New airport discharging subsea pipeline installation design”                                | 1999.9  |
| “New LNG supply offshore pipeline inspection report”   | 1999.5  |
| “Structure reinforcement study for HM-1 crane barge”   | 1999.2  |
| “Anchor force design for pulling offshore supporting barge”                                  | 1999.11 |
| “New port multiple offshore pipeline installation design”                                    | 1998.3  |
| “Multi- purpose offshore terminal in Yellow sea region”                                      | 1998.3  |
| “Pulling Wire deflection design for offshore pipeline installation”                          | 1998.2  |
| “Offshore pipeline stability study”  | 1997.12 |
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| 1. Apparatus for mounting the tidal current generator on caisson           | 1547012       | 2015.08.18 |
| 2. Apparatus for moving below the surface of the water                     | 1473568       | 2014.12.10 |
| 3. File type apparatus for mounting the tidal current generator on caisson | 1475604       | 2014.12.16 |
| 4. Separative Tidal Current Rotor Blade                                    | US-8702396 B2 | 2014.04.22 |
| 5. Tension mooring power generator control flow                            | 1313943       | 2013.09.25 |
| 6. Marine growth prevention device for under water rotating system         | 1258754       | 2013.04.22 |
| 7. Tidal current modular blade and its assembly method                     | 1243497       | 2013.03.07 |
| 8. Current power device applied to offshore wind power system              | 1230082       | 2013.01.30 |
| 9. Superlative tidal current rotor blade                                   | 1206133       | 2012.11.22 |
| 10. The tidal current generator maintenance system                         | 1189363       | 2012.10.02 |
| 11. Tidal current power device having a underwater recovery buoy           | 1182640       | 2012.09.07 |



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| 12. | Floater fo leisure on the water   | 1114957  | 2012.02.03 |
| 13. | Investigation equipment for tidal current performance and equipped transportation | 1071277  | 2011.09.30 |
| 14. | The tidal current generator for transferring power by area contact                | 1056696  | 2011.08.08 |
| 15. | Tidal current generator for compensating eccentricity and method thereof          | 10566695 | 2011.08.08 |
| 16. | Device for indicating the presentation time                                       | 1054382  | 2011.07.29 |
| 17. | Tidal current device with subsea swivel   | 1011927  | 2011.02.17 |
| 18. | Easy repair and maintenance applied flow generation device                        | 1011927  | 2011.01.24 |
| 19. | Active vaning multi arrayed HAT tidal current device                              | 2174000  | 2010.12.10 |
| 20. | Rotating device for pile fixed tidal current device                               | 1000805  | 2010.12.07 |
| 21. | Tidal current device ascending and descending device                              | 1000800  | 2010.12.07 |
| 22. | Wire anti-corrosion oil supply device   | 0625000  | 2010.05.24 |
| 23. | Floating spearing unit for offshore pile splash zone repair                       | 0955850  | 2010.04.26 |
| 24. | Self generating device for ocean survey and guide buoy                            | 0945154  | 2010.02.24 |
| 25. | Repair and maintenance device for tidal current power system                      | 0944239  | 2010.02.18 |
| 26. | Cooling weir flow generation support and fixing device                            | 09238300 | 2009.11.17 |
| 27. | Multi Cable Tie-In Device for Current Power Generation                            | 0826572  | 2008.04.24 |
| 28. | Real time horizontal dry area maintaining device for vessels of traffic           | 0749810  | 2007.08.09 |
| 29. | Inclined level bridge adjustable device   | 0720039  | 2007.05.14 |
| 30. | Elevation adjustable bridge column device   | 0720038  | 2007.05.14 |
| 31. | Wind force free parasol   | 0720040  | 2007.05.14 |
| 32. | An circulating ocean water tank system for absorbing wave energy                  | 0689750  | 2007.02.26 |
| 33. | Lifeboat with remote control system   | 0655790  | 2006.12.04 |
| 34. | Active Wave Energy Absorbing Tank And Experiment Method                           | 0644287  | 2006.11.02 |
| 35. | Subsea Pipeline Installation Technique with Steel Buoy                            | 0537772  | 2005.12.13 |
| 36. | Integrated type signal lamp and a traffic signal displaying method                | 0520984  | 2005.10.05 |
| 37. | Positioning control system for offshore vessels                                   | 0493699  | 2005.05.26 |
| 38. | Apparatus for pulling offshore structure  | 0465620  | 2004.12.30 |
| 39. | Buoy device for offshore operation  | 0338474  | 2002.05.16 |
| 40. | Roller structure for pipeline support   | 0366536  | 2002.12.16 |

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| 1.  | Hydrofoil tail wing system implemented to current power device for yawing motion                     | 2016-0003064       | 2016.1.11  |
| 2.  | Cleaning & Sensor module for offshore riser  | 2015-0110785       | 2015.8.5   |
| 3.  | Cleaning & Sensor module for chain   | 2015-0110786       | 2015.8.5   |
| 4.  | Radial flow reduction device applied to turbine blade  | 2015-0142847       | 2015.10.13 |
| 5.  | Blade wiper device for tidal current power turbine   | 2015-0142845       | 2015.10.13 |
| 6.  | Simple blade pitch control system using compression spring for horizontal axis current power turbine | 2015-0167634       | 2015.11.27 |
| 7.  | Current speed amplifiers applied to caisson foundation structure for tidal current power system      | 2015-0142846       | 2015.10.13 |
| 8.  | Applied current power device for ships   | 2015-0142848       | 2015.10.13 |
| 9.  | Method for lowering cut-in speed of tidal current turbine  | 2015-0167639       | 2015.11.27 |
| 10. | Apparatus for Removing Foreign Substance of The Tidal Current Power Turbine                          | 2014-0094715       | 2014.7.25  |
| 11. | Propulsion device of the ocean   | 2013-0069017       | 2013.6.17  |
| 12. | Floating duct tidal current power plant  | 2013-0057021       | 2013.5.21  |
| 13. | Offshore structure for tidal current power plant hoisted device                                      | 2013-0052566       | 2013.5.9   |
| 14. | Pile type caisson tidal current power plant mounting device  | 2013-0052565       | 2013.5.9   |
| 15. | Capable power generation wave energy absorption device   | 2013-0052564       | 2013.5.9   |
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| 17. | Flowing development system for mooring tension control   | 2012-0003586       | 2012.1.11  |
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| 19. | Assembly turbine blade and method of assembly that   | 2011-0032708       | 2011.4.8   |
| 20. | Self shape configuration blade   | 2011-0020680       | 2011.3.9   |
| 21. | Flow generation turbine blade  | 2011-0020681       | 2011.3.9   |
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| 25. | 3 point mooring berthing device for high tidal region  | 2010-0046962       | 2010.5.19  |
| 26. | Tidal current blade fabrication method   | 2010-0020051       | 2010.3.5   |
| 27. | Tidal current performance testing device   | 2010-0004079       | 2010.1.15  |

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| 28. Subsea recovery buoy attached tidal current device                                       | 2010-0004085 | 2010.1.15   |
| 29. Misalignment adjusting tidal current device  | 2009-0131727 | 2009.12.28  |
| 30. Surface area power transmitting tidal current device                                     | 2009-0131728 | 2009.12.28  |
| 31. Indication Apparatus of Presentation Time  | 2009-0060574 | 2009.7.3    |
| 32. Apparatus of Tidal Current Power System  | 2009-0060573 | 2009.7.3    |
| 33. Tidal current power Device   | 2009-0012447 | 2009.2.16   |
| 34. Dynamic Rotating Device for Multi-arrayed Tidal Current Power System                     | 2008-0126078 | 2008.12.11  |
| 35. Dynamic Control Device for Floating Type of Underwater Bridge                            | 2008-0097703 | 2008.10.6   |
| 36. Current speed increasing device for current power generation                             | 2008-0010319 | 2008.8.1    |
| 37. Rotating Device for Pile Fixed Current Power Generation Module                           | 2008-64879   | 2008.7.10   |
| 38. Rise and Fall Device for Fixed Current Power Generation Module                           | 2008-64890   | 2008.7.5    |
| 39. Current generation system using tidal power generation dam                               | 2008-0058933 | 2008.6.23   |
| 40. Current speed increasing device for current power generation                             | 2008-0057753 | 2008.6.19   |
| 41. Current Power Generation Module with Ascending, Descending and Trim Control              | 2008-0052942 | 2008.6.5    |
| 42. Flow Current Power Generation Device installed at bridge                                 | 2008-0052110 | 2008.6.3    |
| 43. Apparatus for automatically supplying oil in wire anti-corrosion                         | 2008-0046584 | 2008.5.20   |
| 44. Ascending, Descending Device for Flow Current Power Generation body using Compressed air | 2008-0044032 | 2008.5.13   |
| 45. GBS type Rotating Device for Tidal Current Power   | 2008-0041898 | 2008.5.6    |
| 46. Current speed increasing device for current power generation                             | 2008-0011257 | 2008.2.4    |
| 47. Supporting and Fixing Device for Flow Power Generation in Cooling Water Channel          | 2007-134098  | 2007.12.20  |
| 48. Caisson Ocean Energy Device for Offshore survey and location buoys                       | 2007-134099  | 2007.12.20  |
| 49. Current Power Generation Module with Ascending, Descending and Trim Control              | 2007-0119610 | 2007.11.22  |
| 50. Vertical One Body Axial Flow Current Power Generation Device                             | 2007-0119611 | 2007.11.22  |
| 51. Self Mobile Separable Device for Ocean Pile Splash Zone Corrosion Repair                 | 2007-102202  | 2007.10.10  |
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| 53. Propeller current generation device  | 2003-38067   | 2003.6.12.  |
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| 56. Advanced traffic light device  | 2002-83843   | 2002.12.26  |
| 57. Pulling device for ocean structure   | 2002-15711   | 2002.3.22   |
| 58. Floating current generation system   | 2001-0081370 | 2001.12.19. |
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| 60. Current generation system inside break water   | 2001-0081368 | 2001.12.19  |
| 61. Subsea pipeline installation with steel buoy   | 99-47156     | 1999.10.28  |

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“Evaluation of Spudcan Jetting System for Wind Turbine Installation Vessel using Centrifuge Model Test”, 2015 offshore plants spring design research workshop, The Korean Society of Ocean Engineers, Incheon POSCO global R&D Center, 2015.6.18-19(C.H. Goo , Y. H. Rho , D.Y. Kim)

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“Performance Evaluation of TCP Device with Upstream Duct Installation”, KOES, pp. 77-80, 2009.11 (with K.H.Lee, J.Y.Yim, K.S.Chae)

“Development of berthing and trestle system for high tidal range region”, KCEA, pp. 1093-1096, 2009.10 (with W.C.Cho, K.S. Chai, S.H. Song)

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“Comparison Of Dynamic Displacement Of Breasting Dolphins Caused By Wave And Berthing Ship”, Proceedings of the 5<sup>th</sup> international conference on Asian and Pacific Coasts(APAC) Volume 1, Singapore, pp 279-285, October 13-16 2009 (with G.S. Yoon, W.C. Cho, J.Y. Yim)

“Recent TCP(Tidal Current Power) Projects in Korea”, 2009 International Symposium on Low Carbon Technology Beijing, China, September 15-18, pp1-5, 2009. 6 (with K.H. Lee, Y.H. Rho)

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“Mechanical properties of cellulose-based electro-active paper”, Mechanical Engineering Science, Vol. 222, part C, pp. 577-583. 2008/3 (with J Kim, J. Shelton, W. Craft) – SCI

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#### **In 2007**

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#### **In 2006**

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### **In 2005**

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### **In 2004**

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“A Study on the Behavior of Pitched Beams”, Proceedings of the Annual Spring Meeting, SNAK, pp. 265-268, 2000/4 (with K.S. Kim, N.G. Kang\* and Y.H. Shin\*)

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## **In 1999**

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### **In 1998**

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### **In 1997**

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“Barge Mounting Technique for Installation of Large Offshore Bridge Structures”, ISOPE (International Society of Offshore and Polar Engineering) Conference, Vol. I, pp. 379-386, May 1997 (with Y.T. Kim)

“Stability of Pipeline in Curved Route During Offshore Pipeline Installation”, ISOPE (International Society of Offshore and Polar Engineering) Conference, Vol. II, pp.243-248, May 1997 (with H. Shin and J.B. Kim)

“Design of Waterflood Intake Offshore Structure”, KSOE conference, pp. 276-280, 1997/5

### **In 1996**

"Detail Investigation of Offshore Stabbing Guide Design", ISOPE (International Society of Offshore and Polar Engineering) Conference, Vol. I, pp. 321-336, May 1996

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### **In 1995**

"Numerical Study on Ice/Structure Interaction in Dynamic Ice Field", Journal of Ocean Engineering and Technology, Vol. 9, No. 1, pp. 36-46, June 1995

“Dynamic Wave Pressure Study on a Recurved Offshore Structure”, Journal of Ocean Engineering and Technology, Vol. 9, No. 2, pp-149-155, Dec. 1995. (with .G. Rismiller)

"Oil discharge from offshore pipeline ", KSOE conference, pp. 351-365, 1995/10

#### **In 1994**

"Submarine Pipeline Installation", Journal of Ocean Engineering and Technology, Vol. 8 No. 1, pp. 3-15, June 1994.

#### **In 1993**

"Comparison and Limitations of S-Lay and J-Lay Methods", ISOPE(International Society of Offshore and Polar Engineering) Conference, Vol. II, pp. 201-206, Singapore, 1993.

#### **In 1992**

"Effect of Pipe Spacing on Marine Pipeline Scour", ISOPE(International Society of Offshore and Polar Engineering) Conference, Vol.1, pp. 101-109, San Francisco, June 1992 (with J. Westerhorstmann and J.L. Machemehl).

"Dynamic Water Wave Pressures on a Recurved Model Seawall", OTC(Offshore Technology Conference, Vol.1, pp. 113-121, Houston, May 1992 (with G. Rismiller and J.L. Machemehl).

#### **In 1991**

"Offshore Structure Design in an Ice Environment", Journal of Ocean Engineering and Technology, Vol.5, No.2, pp. 143-155, Dec. 1991.

"Study of Tidal Inlet Stability", Journal of Waterway, Port, Coastal and Ocean, ASCE(American Society of Civil Engineers), Vol.117, No.6, pp.588-598, Nov. 1991 (with J.L. Machemehl).

"Numerical Study of Movement of an Icebreaking Tanker Moored to an Offshore SPM Terminal in Arctic Condition", Ph.D. Dissertation, Texas A&M University, 1991.

#### **In 1990**

"A Study of Strudel Scours in the Alaskan Beaufort Sea", Pacific/Asia Offshore Mechanics Symposium, Vol.II, pp. 341-344, Seoul, June 1990 (with J.L. Machemehl).

"Study of Indentor Shapes for Reducing Ice Forces on Arctic Structures and Ice Forces for Combined Failure", OTC(Offshore Technology Conference), Vol.VI, pp. 185-192, Houston, May 1990 (with J.L. Machemehl).

"Study of Indentor Shape on Arctic Structures and Ice Loads for Combined Failure Mode", Ocean Drilling Program, Texas A&M University, March 1990.

"Level Ice Resistance on Vessels", Journal of Ocean Engineering and Technology, Vol.4, No.1, pp. 12-18, June 1990 (with J.M. Niedzwecki)

#### **In 1989**

"Ice Gouge Study in the Alaskan Beaufort Sea", Journal of Ocean Engineering and Technology, Vol.4, No.4, pp. 12-18, Dec. 1989 (with J.L. Machemehl)

"Note on New Ice Gouge Events in Alaskan Beaufort Sea", Journal of Cold Regions Engineering, ASCE (American Society of Civil Engineers), Vol.3, No.2, pp. 545-550, Dec. 1989 (with J.L. Machemehl)

"Nearshore Ice Gouge Depths in Alaskan Beaufort Sea", Journal of Cold Regions Engineering, ASCE(American Society of Civil Engineers), Vol.3, No.3, pp. 150-153, Sept. 1989 (with J.L. Machemehl)

## **Industry Experience:**

### **1. Hyundai Heavy Industries, Co. Ltd. (1992. 8 – 1997. 2: Department Head)**

**Role :** Technical assistance and presentation, Installation Analysis, Technical advise, PM, etc.

**Involved projects :**

- IOCL India pipeline project (Project Engineering Manager)
- Brunei AMDP-30 pipeline and jacket project (Project Engineering Manager)
- HX/HY India platform and subsea pipeline project (Project Engineering Manager)
- Thailand Petchburi Terminal and offshore pipeline project (Project Engineering Manager)
- B-121 India subsea pipeline and structure project (Project Engineering Manager)
- RAVVA project India-offshore platforms, multi pipeline, SPM installation (Project Engineering Manager)
- ARCO China Yacheng project (Project Manager)
- Vietnam Gas Utilization project-pipeline and platform (Project Engineering Manager)
- ONGC-NQP, NPC and L-IIproject India-pipeline/structure installation (Project Engineering Manager)
- Weizhou 13-4 China, Bangladesh Jamuna, Africa EDOP project-technical assistance, installation design

### **2. INTEC ENGINEERING INC., HOUSTON, TEXAS, USA (1991. 5 – 1992. 8)**

**Role :** Mooring system analysis, pipeline design, Arctic structure design, flexible riser dynamic design

**Involved projects :**

- AMOCO China - Liuhua project Flexible Riser design
- Lucky Engineering Korea – Inchon Spread Mooring System design
- EXXON - Mobil Bay subsea pipeline design
- TRANS MOUNTAIN - Low Point project offshore pipeline design
- TEXACO - Russia Timan Pechora project Arctic Oil Storage Structure design
- TEXACO and CONOCO – Russia Timan Pechora project offshore structure design
- ABB Lumus Crest – West Africa Angola Takura offshore pipeline design