

2014 The 8<sup>th</sup> Asian Shipbuilding Experts' Forum(ASEF),  
Jeju

# R&D and Human Resource Development in Offshore and Shipbuilding in Korea

A collaboration between industrial and academic  
organizations

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- 1. Background**
  - 2. Organizations in NAOE (SNAK and KOSHIPA)**
  - 3. Research and Development**
  - 4. Human Resource Development**
  - 5. Concluding Remarks**
- About Speakers**



- ◆ **Needs for collaboration between SNAK and KOSHIPA**
- ◆ **In research and development**
  - **Topics on common interests**
  - **Topics on international regulations (ISO, IMO) and Class codes**
  - **Technology transfer from big to small shipyards**
  - **Strategic planning of government-funded researches**
- ◆ **In human research development**
  - **Topics on new technologies (offshore engineering, subsea production)**
  - **Both for professors and students**



### 2-1 Society of Naval Architects of Korea (SNAK)

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- ◆ **Founded in 1952**
- ◆ **No. of Members : 2,200**
  - **Academia**
  - **Shipyards**
  - **Research organizations**
  - **Some foreign individuals**
- ◆ **Yearly, 6 magazines and 6 Volumes of Paper Journals in Korean**
- ◆ **International Journal of Naval Architecture and Ocean Engineering**
- ◆ **Spring conference and Annual Meeting**
- ◆ **200 papers presented at each conference, 600 participants**
- ◆ **Independent seminars, workshops, etc. by academic committees**



### 2-1 Society of Naval Architects of Korea (SNAK)

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- ◆ **10 academic committees**
  - **Medium-sized shipyards**
  - **IT applications**
  - **Ship casualties**
  - **Structures**
  - **Hydrodynamics**
  - **Naval engineering**
  - **Design**
  - **Construction**
  - **Yachts and Leisure boats**
  - **Very Large Floating Structures**



### 2-2 Korean Offshore and Shipbuilding Association (KOSHIPA)

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◆ **Members include 10 shipyards**

- 1. Hyundai Heavy Industries Co., Ltd.**
- 2. Samsung Heavy Industries Co., Ltd.**
- 3. Daewoo Shipbuilding & Marine Engineering Co., Ltd.**
- 4. Hyundai Samho Heavy Industries Co., Ltd.**
- 5. Hyundai Mipo Dockyard Co., Ltd.**
- 6. STX Offshore & Shipbuilding Co., Ltd.**
- 7. Sungdong Shipbuilding & Marine Engineering Co., Ltd.**
- 8. Hanjin Heavy Industries & Construction Co., Ltd.**
- 9. Daesun Shipbuilding & Engineering Co., Ltd.**
- 10. ShinaSB Yard Co., Ltd.**



## ◆ 2014 Research for Medium-sized Shipyards

- Two technologies, proven at big shipyards, are selected to improve smaller shipyards' competency

### 1. Energy-saving devices for ships

- Devices attached to hull
- Experimental and numerical verification

### 2. Simulation-based ship production for improving productivity

- Production planning and scheduling
- Production process modeling for simulation



- ◆ **2013-2014 Preliminary studies for new international issues**
  1. **Working plan for new international codes**
    - ISO, IMO codes for safety and environment protection
      - Gas-fueled vessel
      - Polar code, water ballast management, ship protection painting
  2. **Practices and strategy for HSE-related international regulations**
    - ISO and IMO codes provide basic standards.
    - Classification societies provide specific regulations.
    - Shipyard carry out relevant activities.
  3. **Very Large Floating Structures**
    - Concept design study
    - Proposal for government strategy



- ◆ **2014 KOSHIPA-SNAK Joint program on Human Resource Development**
  - **During the SNAK Annual Meeting at Changwon City**
  - **Two sessions**
    - 1. Joint HRD Forum**
      - Invited speaker (former CEO of STX offshore and shipbuilding co.)
      - Invited discussions by former SNAK presidents
      - Open discussion for HRD in shipbuilding
    - 2. Job recruiting session for college graduates**
      - Presentation by shipyards' HRD staffs
      - Q&A by participating students, professors, and advisors



- ◆ **KOSHIPA-SNAK Summer program on Professor workshops**
  - Full two-day program at a shipyard
  - Lectures by shipyard specialists
  - Shipyard tour with technical presentations
  
- ◆ **SNAK Education committee**
  - Professors and shipyards directors
  - Publishing textbooks
  - Sharing lecture notes (powerpoint files)

- ◆ **SNAK and KOSHIPA continue to collaborate R&D as well as human resource development.**
- ◆ **For common interests in shipbuilding and offshore plants, I propose international collaboration.**
  - **Detail acting plans for common international issues**
  - **Education and training both for professors and students**



- ◆ **President, the Society of Naval Architects of Korea**
- ◆ **Professor in Dept. of Naval Architecture and Ocean Engineering, Seoul National Univ.**
- ◆ **BS and MS in Naval Architecture from Seoul National Univ.**
- ◆ **Ph.D. in Ocean Engineering from M.I.T., U.S.A.**
- ◆ **Chairman, Committee on Science and Technology Societies of Ocean Engineering**
- ◆ **Member, National Academy of Engineering of Korea**
- ◆ **Academic Achievement Award and best papers winner from SNAK**
- ◆ **Two times Elmer Hann awards from SNAME, U.S.A.**

