

International Conference on Computer Applications in Shipbuilding 2009

(ICCAS)

**Shanghai, China
1-3 September 2009**

Volume 1 of 3

ISBN: 978-1-61567-665-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (209) by The Royal Institution of Naval Architects
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact The Royal Institution of Naval Architects]
at the address below.

The Royal Institution of Naval Architects
10 Upper Belgrave Street
London SW1X 8BQ UK

Phone: 44 207 235 4622
Fax: 44 207 259 5912

publications@rina.org.uk

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

Hullform Surface Models: Guidelines and Tolerances.....	1
<i>Michael A. Polini</i>	
Prediction of Ship Powering Performance of Large Container Ships Based on the Method of Artificial Neural Network.....	46
<i>Y T Liu, N Ma, C J Yang</i>	
Semi Automatic Failure Analysis Based on Simulation Models	78
<i>Andreas Uhlig</i>	
Feature Modeling and Simulation-driven Design for Faster Processes and Greener Products	117
<i>Claus Abt, Mattia Brenner, Stefan Harries</i>	
Reducing Time and Effort for Structural Design and Assessment.....	126
<i>R Doig, M Bohm, J Stammer, P Hernandez, S Griesch, Wadan Yards, D Kohn</i>	
Automatic Generation of Fatigue Analysis Model Reflected the Feature Geometry of the Typical Structural Parts	130
<i>Seong-Jin Yoo, Won-Jun Lee, Heung-Won Suh</i>	
Utilization of 3D-CAD System at Early Design Stage and Powerful Interface Between 3D-CAD and FE-Analysis	163
<i>Kohta Shibasaki, Yutaka Nishimura</i>	
Data Modelling -Its Use and Contribution to Ship Design, Manufacture, Build and Operation.....	169
<i>John Martin</i>	
The Benefits of Applying Architectural Modelling to the Ship Design and Build Process	179
<i>Simon Jones, Ralph Hudson</i>	
How to Make 3D Accessible to the Customer.....	187
<i>Niclas Kling</i>	
Structural Drawings with SmartMarine® 3D.....	215
<i>Tom Szoka, Jinsup Cheong</i>	
Application of Knowledge-Based Engineering Methods for Hull Structural Member Design	249
<i>Jinfeng Chen, Hezhen Yang, Deyu Wang</i>	
Enterprise Data-Reuse and Experienced Ship Design for Shipbuilding, Marine and Offshore Industries.....	289
<i>Yann Limon-Duparcmeur, Cécile M. Turnbull, Mike Polini</i>	
Using CAD/CAM Technology More Efficiently in Chinese Shipyards	324
<i>Guangwu Liu, Xinhua Zhang</i>	
Study of Three Dimensional Coordinate Measuring Methods for Production of Ship Hull Blocks	333
<i>Dianzhen Zhang</i>	
Development of Accuracy Measurement Method for Shipbuilding Block Using Laser Scanners	352
<i>Kazuo Hiekata</i>	
Researches on Load-out Technological Equipment in Super Block Construction Method.....	384
<i>Yanbin Wu</i>	
Computation and Simulation of the Launching for Land Shipbuilding	404
<i>Mingxia Zhang, Yan Lin, Kun Lei, Chengmeng Sun, Pinle Qin, Zhuoshang Ji</i>	
Study on the Process Optimization for Hull Block Assembly Based on Quantitative Analysis	429
<i>Ji Wang, Yujun Liu, Yanping Deng, Youle Wang</i>	
Max-Plus-Algebra Based Scheduling of a Ship Building Line	461
<i>Hiroyuki Kajiwara, Yasuhiro Hitoi, Youichi Nakao</i>	
A Study on Evaluation and Improvement of Organizational Performance in Fabrication Shops.....	500
<i>Taiga Mitsuyuki</i>	
Productivity Extension Module for Ship Hull Construction Work-preparation Software based in AutoCAD platform	540
<i>Zhou Chi</i>	
Integrated Management of Ship Compartments.....	545
<i>Fernando Zurdo</i>	
Space Management as an Enabling Technique for the Development of Ships' Arrangements Based on a Common Reference Model.....	552
<i>Ulf Eriksson, Mats Westerius, Leif Rading</i>	
Software Tools Enabling Design Optimisation of Mustering and Evacuation for Passenger Ships	556
<i>Pierre Berseneff, Jacques Huberty, Uwe Langbeckerm, Jean-Jacques Maisonneuve, Sirehna Antti Metsä</i>	

3D Life Cycle Product Modelling from the First Feasibility Stage to Lifetime Information Management.....	566
<i>Rami Hirsimaki</i>	
Development of Design Process Simulator for the Ship Initial Design Stage.....	594
<i>Kunihiro Hamada</i>	

VOLUME 2

Development of 3D Model Based Application for Creating Stability Documents Supporting Statutory Rules.....	657
<i>Mitsuhiko Kidogawa, Taisei Takamoto, Naoki Mizutani</i>	
Virtual Display of Ship Movements in Marine Environments.....	719
<i>Peng Liu, Rongwu Yang, Jinsong Xu</i>	
Advanced Simulations for Ship Design and Redesign	724
<i>Karsten Fach, Volker Bertram, Holger Jefferies</i>	
The Feasibility of Developing a Quiescent Period Prediction System in a Simulation Environment	751
<i>Paul Crossland</i>	
Study on the Dynamic Interference Detection and its Application to Ship Design and Building Simulation	763
<i>Naikun Wei, Rundang Yang, Dong Xu, Ziming Xie</i>	
A Procedure Model to Tap the Full Potential of Virtual Reality in the Maritime Industry.....	767
<i>Christian Nedess, Axel Friedewald, Christoph Schäfer</i>	
Astute Class Nuclear Submarine - The IT Solution.....	777
<i>Dwane Wilson</i>	
Value Chain Integration - The Future for LNG?.....	787
<i>Steve Gibbons</i>	
Exchange of Outfitting Data between Tribon and PDMS based on Neutral Formats	791
<i>Jinggao Li</i>	
Application of Rules for Quality Control of Product Model Data.....	832
<i>R. Bronsart, A. Geitmann</i>	
Geometric Constructions: The Next Level of Rule-based Design Automation.....	842
<i>Kristin Cochran, Patrice Blanchard</i>	
Automatic Design for Pipe Arrangement Considering Valve Operability	868
<i>Hajime Kimura</i>	
A Best-of-Breed Approach to Marine Design Tools.....	918
<i>Darren Larkins</i>	
Digital Convergence is Driving Interoperability Across Engineering Domains In the Marine Industries.....	923
<i>Neil McPhater</i>	
Production Design & Applications in Shipbuilding	931
<i>Ioannis A. Mavrakis</i>	
Design and Implement of an Equilibrium-parameter Based Anti-sinking Assistant Decision System (EPBS)	981
<i>Qinqi Wei, Fenghui Wu, Pengan Xiao, Hongtao Ma, Xi Chen</i>	
The Important Factors for the Implementation of Green Shipbuilding	999
<i>Dapeng Lu</i>	
Early Stage Planning Support	1023
<i>Kees Meijer, Jeroen Pruyne, John Klooster</i>	
An Optimization Framework for the Design of Planing Craft	1028
<i>A. F. Mohamad Ayob, T. Ray, W. F. Smith</i>	
New CAE Package For Propulsion Train Calculations.....	1058
<i>Yuriy Batrak</i>	
Towards a Simulation Standard for the Virtual Ship.....	1114
<i>Gary Henry</i>	
Virtual Reality System for Multilateral Cooperation in Shipbuilding	1124
<i>Hua Zhang, Zhenhai Liu, Jinsong Xu</i>	
A Fuzzy Metric for Assessing the Producibility of Straightening in Early Design.....	1132
<i>Caprace Jean-David</i>	
The Use of Advanced Structural Analysis and Simulation Tools to Validate a New Independent LNG Tank Containment System.....	1160
<i>Regu Ramoo, Mohan Pathasarathy, Julien Santini, Thomas Lamb</i>	

Efficiency Analysis of Ship Design Projects Using Data Envelopment Analysis: A Benchmarking Exercise.....	1213
<i>S Navaneetha Krishnan, Seema Sharma, Kc Iyer</i>	
Integrating Simulation and Computer Aided Ship Design Software and Processes	1225
<i>D. Andrews, L. Casarosa, R. Pawling</i>	
Deriving Parametric Models for Goal-based Design of Ship Concepts.....	1289
<i>Romanas Puisa, Dracos Vassalos</i>	

VOLUME 3

A Knowledge Retention System for Managing Risk Based Design Approval	1333
<i>Clive Bright, Mark Wharton</i>	
CCS New Buckling Analysis System Based on CSR for Double Hull Oil Tankers	1360
<i>Wei Zhou, Ying Hong, Feng Qian, Yixin Gu</i>	
Computer Aided Rule-Based Scantling Calculations of Ship Using Programming Tools.....	1366
<i>P. Ramanaidu, P Shankar, P Patil, R Bhat, R Namdev, A Samanta</i>	
QSHIP; Advanced Use of Hydromechanics in Early Design Stage	1373
<i>Arno Bons</i>	
Parametric Design Rules Approach to Mass Customization.....	1403
<i>Richard Lee Storch, Sashi Komendur</i>	
Advancing Innovation in the Inland Shipping Sector by Means of a Rapid Conceptual Ship Design Model	1411
<i>R. G. Hekkenberg</i>	
Modes of Integrated Collaborative Ship Design.....	1436
<i>Ian Whitfield, Alex Duffy</i>	
Virtual Integration Platform for Computational Fluid Dynamics	1483
<i>Wenjuan Wang, Alex Duffy, Ian Whitfield</i>	
The Technology of Manufacturing BOM Based on PDM in Shipbuilding	1548
<i>Xie Jing, Li Shiyun</i>	
Development of Production Materials Quantity System Using the Tribon M3 Model Data.....	1555
<i>Yong-Tae Jeon, Young-Ho Kim, Heung-Won Suh</i>	
Research on the Production Planning and Control in Shipbuilding Engineering Based on the Supply Chain Management	1587
<i>Xiaozhe Wang</i>	
Study on Location Management System of Steel-plate and Hull Parts in the Outside Area.....	1612
<i>Y. Sasaki, K. Muraoka, Y. Ohshita</i>	
Simulation Model for Analysis of Flow of Steel in Shipbuilding Shipyards	1637
<i>Marta C. T. Reyes, Silvio E. G. Melo, Clarice T. S. Pinheiro</i>	
Based on the Dedicated Ship Design Software Systems of the Digital Shipbuilding Management	1641
<i>Jia Xu, Hai Wang</i>	
Life Cycle Cost Management for Ballast Water Systems Considering Finance Crises	1647
<i>Reinhard Ahlers, Markus Lehne</i>	
Supporting Ship Life Cycle Management with Simplified CAD Data	1670
<i>Christian Cabos, Wiegand Grafe</i>	
State of the Art Inventory Life Cycle Support	1678
<i>Elena Moredo, Robert Hekkenberg</i>	
Integration of Application System Based on PDM in Shipbuilding.....	1717
<i>Chenggang Gong, Shiyun Li</i>	
A Neutral Framework for the Integration Of CAD In Product Model Lifecycle Systems	1769
<i>Augusto Gómez, Robert Penas, Luis Sánchez, Luis Pastor</i>	
Research on Meta-Synthesis Driving Engine Technology of Shipbuilding	1777
<i>Yu Wang, Jun Yan, Yu You, Shenghua Yao</i>	
Information Access and Reuse as a Business Benefit for Shipyards.....	1780
<i>David Thomson</i>	
Development of a Logic Based Product Lifecycle Management (PLM) Model for Shipbuilding Industry	1819
<i>Tae-Wan Kim</i>	
An Automatic Schedule Generation System of Outfitting Process in Shipbuilding.....	1833
<i>Yan Wei, Ubald Nienhuis</i>	

Managing a Single Source of Product Data Over a Ship's Life: An Achievable Imperative for Modern Shipbuilding	1842
<i>Marc Donoghue</i>	
Research and Development of Shipbuilding Cost Accounting System based on Project Life Cycle.....	1890
<i>Qinghe Cheng, Haijun Li, Qi Zhang</i>	
Development of Scheduling System for Piping Factory by the use of TOC and Production Model	1896
<i>Kunihiro Hamada</i>	
Automation of Oil Rig Fabrication	1970
<i>Oskar Lee, Kwok Lum</i>	
Author Index	