Assoc. Prof. Ana Mandić Ivanković PhD, Civ.Eng Vice dean for International and Inter-institutional Cooperation & Head of the Chair for Bridges, Department for Structures

Faculty of Civil Engineering University of Zagreb

ARCH BRIDGES BRIDGES OF COOPERATION

ABOUT FACULTY: Education

The oldest civil engineering Faculty in Croatia conducting university education in all branches of civil engineering

1835 Bachelors in civil engineering

1428 Masters in civil engineering

48 postgraduate specialists

292 doctors of science

http://www.grad.unizg.hr/





Transportation

Hydraulic

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Buildings

Engineering

Mechanics

ABOUT FACULTY: Education

a valid ASIIN international Accreditation

Akkreditierungsagentur für Studiengänge der Ingenieurwissenschaften, der Informatik, der Naturwissenschaften und der Mathematik e.V.



Accreditation Certificate

The Accreditation Agency for Degree Programmes in Engineering, Informatics, Natural Sciences and Mathematics e. V. (ASIIN) has accredited the

> Bachelor's degree programme "Civil Engineering"

at the request of
University of Zagreb
Faculty of Civil Engineering
with the seal of ASIIN e.V.

Accreditation was issued on 30 March 2012 and on 22 March 2013 by decision of the ASIIN Accreditation Commission for Degree Programmes and is valid until 30 September 2017.

Upon successful completion of the programme, University of Zagreb awards the degree of "Bachelor of Science".

15 April 2013

11. Nobal

Dr.-Ing. Martin Molzahn

Chairman of the Accreditation Commission for Degree Programme

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Managing Director

9. Esternador

Chairman of the Accreditation Commission for Degree Programmes

ASIN was admitted into the European Quality Assurance Register for Higher Education (EQAR) on 10 April 2009. EQAR lists agencies which substantially comply with the European Standards and Guidelines (ESG). The admittance confirms the implementation of the ESG by ASIN.



Accreditation Certificate

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30 April 2013

N. Nobal

Dr.-Ing. Martin Molzahn
Chairman of the Accreditation Commission for Degree Programmes

Tig Llow

Dr. Iring Wasser

J. Grafmand

Chairman of the Accreditation Commission for Degree Programmes

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ABOUT FACULTY: International projects

- high experience with participating in research, educational and networking projects:
 - OBZOR, HORIZON 2020
 - FP6, FP7
 - ERASMUS +
 - CIP- ECO INNOVATION,
 - CIP-IEE- Inteligent Energy Europe,
 - COST Europ. Coop. in Science and Technology
 - EUREKA
 - LLP (Lifelong Learning Programme)
 - LIFE
 - NEWFELPRO
 - BICRO
 - TEMPUS (Learning Programme)
 - INTERREG CENTRAL EUROPE





ABOUT FACULTY: International projects

- □ FP7
 - Bridge SMS Intelligent Bridge Assessment Maintenance and Management System
- HORIZON 2020
 - DESTinationRAIL Decision Support Tool for Rail Infrastructure Managers
 - INCEPTION Inclusive Cultural Heritage in Europe through 3D semantic modelling
 - I Network for Using BIM to Increase the Energy Performance
 - GoSAFE RAIL Global Safety Management Framework for RAIL Operations
 - Innovative training schemes for retrofitting to nZEB-levels
- Research Fund For Coal and Steel
 - Valorisation of Knowledge for Sustainable Steel-Composite Bridges in Built Environment
- Croatian-Chinese Scientific and Technological Cooperation
 - Graph-theoretical methods for nanostructures and nanomaterials

ABOUT FACULTY: Professional activities

- Faculty members offer professional expertise and counselling
 - Design, studies and state required proof reviews
 - Inspection, measurements and testing
 - Assessment, monitoring and retrofit
 - Expert comities and bodies
 - Management and investment risk analysis

Assembly of Zagreb airport building roof, 2017



Cantilevering arch construction of Skradin bridge, 2005



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Zagreb Rijeka, Zagreb - Split Highways



Reconstruction of Peruća dam, Cetina River, HP Plant



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CHAIR FOR BRIDGES: traditionally

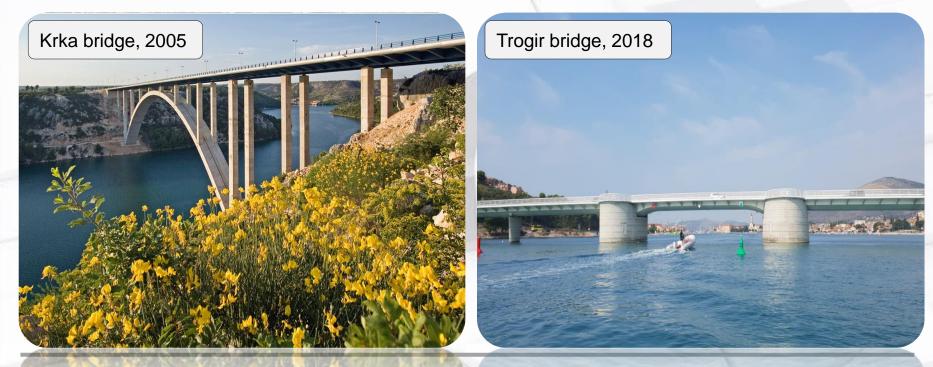
- is the oldest technical Chair of University of Zagreb founded in 1919
- is enrolled as scientific centre in the field of bridges
- is a very productive core where many big bridges are designed



China – Croatia Higher Education Institutions Forum

CHAIR FOR BRIDGES: traditionally

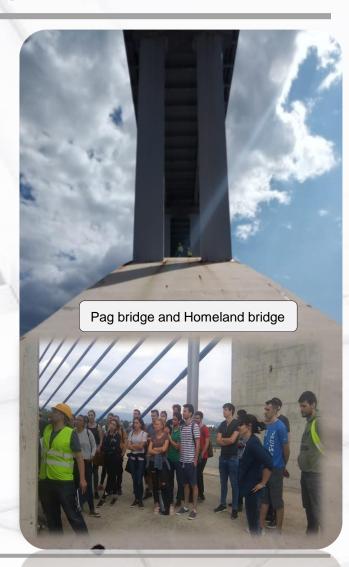
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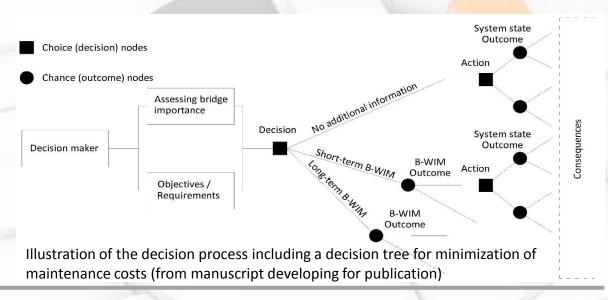
CHAIR FOR BRIDGES: 2018

- Influence of concrete damage on reinforcement corrosion - computer simulation and in service performance of bridges: CODEbridges
 - Research project founded by Unity through Knowledge Fund
 - Results based on experiments, measurements and numerical modelling will be useful to scientists, public sector and industry dealing with the global problem of chloride induced corrosion of steel in concrete
 - https://www.grad.unizg.hr/codebridges



CHAIR FOR BRIDGES: 2018

- COST Action TU 1402: Quantifying the value of SHM
 - Chair: Sebastian Thöns, DTU
 - Vice-chair: Ana Mandić Ivanković, Fac. of Civil Eng., UNIZG
 - Prof. Dagang Lu, Reliability and Risk Engineering, Harbin Institute of Technology, China: International Observer
 - https://www.cost-tu1402.eu/action



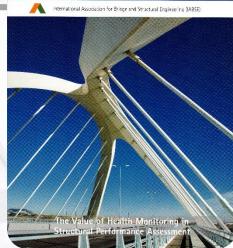
CHAIR FOR BRIDGES: 2018

- actively participate in various Croatian and International commissions and bodies.
 - Vice-chair in the IABSE Commission 1 on Performance & Requirements for Structures
 - Vice-chair of the Editorial board of the Journal Structural Engineering International
 - http://www.iabse.org

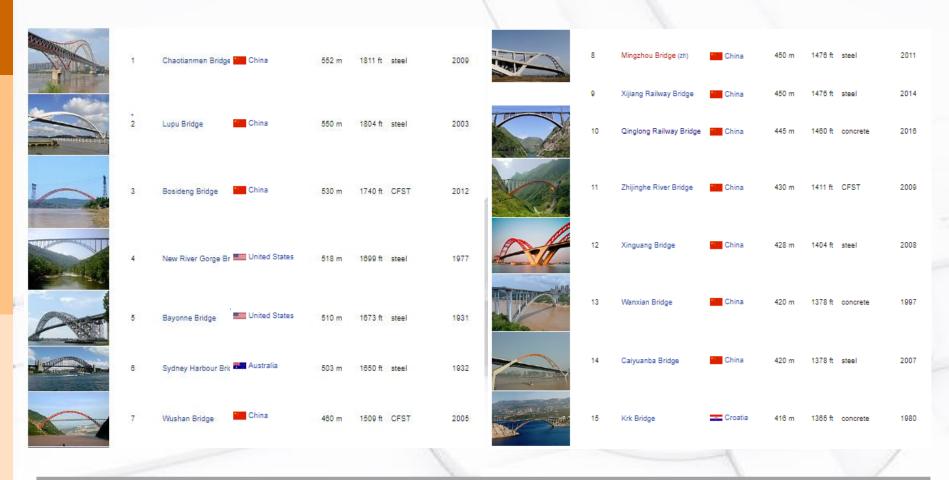
CHINA: 150 members Prof. Dr. Yaojun Ge, Dept of Bridge Eng., Tongji Univ. – next president of IABSE !!!







Long span arch bridges

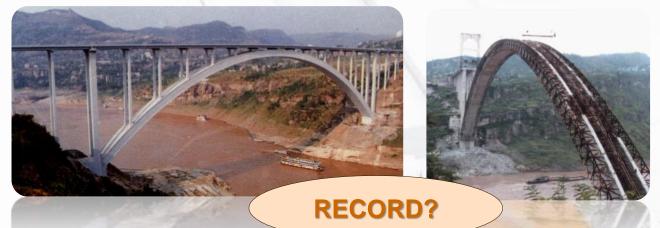


Exploring the limits of reinforced concrete arch bridges

Wanxiang Bridge 1997

L = 420 m

RC arch with rigid steel tube reinforcement



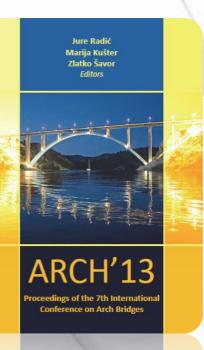


Krk bridges 1967-1980 RC arches 244+390 m innovative procedure forming a trussed arch cantilevers

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- Exploring the limits of reinforced concrete arch bridges
 - UNIZG, Fac. of Civ. Eng. & University of Fuzhou, College of Civ. Eng.
 - prof. PhD Jure Radić & prof. PhD Baochun Chen
 - Formaly: 2009-2011, Actually: LIMITLESS

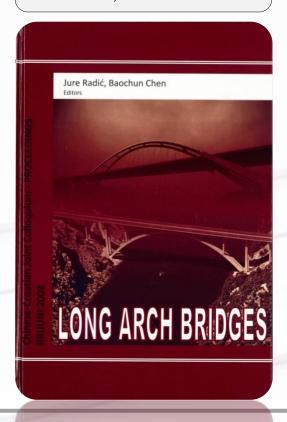




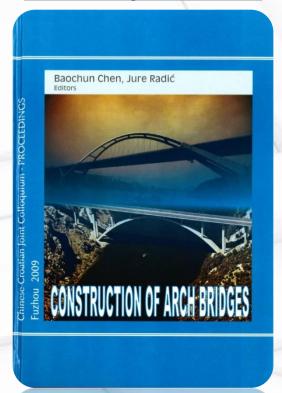


3 Chinese-Croatian Joint Colloquium

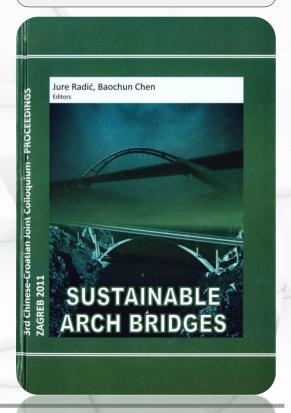
State of the art: Concrete, CFST-Concrete filled steel tubular, Steel



Erection methods, manufacturing of steel arches, quality control, monitoring, interaction of constr. meth. and design



New materials, RPC, UHPFRC, CFST; assessment, repair, maintenance, durability issues,



- Joint paper + 2 keynote lectures:
 - Chen, Baochun; Du, Renyuan; Šavor, Zlatko. EXPERIMENTAL STUDIES ON MECHANICAL PROCESS OF RPC ARCH MODELS UNDER IN-PLANE LOAD
 - CCC2011 The 7th Central European Congress on Concrete Engineering "Innovative materials and Technologies for Concrete Structures" / Budimpešta, 2011.
 - Chen, Baochun; Du, Renyuan; Šavor, Zlatko. TRIAL DESIGN AND MODEL TESTS ON REACTIVE POWDER CONCRETE (RPC) ARCHES
 - 3rd Chinese-Croatian Joint Colloquium on SUSTAINABLE ARCH BRIDGES, Zagreb 2011. 31-44
 - Chen, Baochun; Šavor, Zlatko; Huang, Qingwei: MATERIAL PERFORMANCE FOR LONG SPAN CONCRETE ARCH BRIDGES: HIGHER IS BETTER
 - Proceedings of the 8th international conference on arch bridges ARCH 2016 -Arch bridges in culture, Wroclaw, 2016.



Colleague working in school of Architecture and Civil Engineering, Xiamen University

Name: Gao Jing Gender: Female

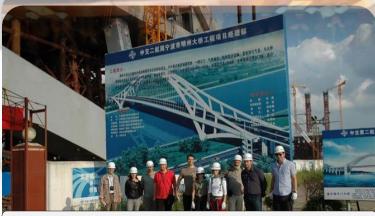
Degree: Doctor of Engineering **Title:** Associate professor

Research Interest: Steel-concrete composite bridge, application of CFRP in bridge engineering

Laboratory: College of Civil Engineering Fuzhou University







TV: Ningbo Mingzhou Steel Arch Bridge under construction

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Assoc. Prof. Ana Mandić Ivanković PhD, Civ.Eng Vice dean for International and Inter-institutional Cooperation & Head of the Chair for Bridges, Department for Structures mandicka@grad.hr

Faculty of Civil Engineering University of Zagreb

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Thank you for your attention and looking forward to possible further cooperation!