COST Action FP1402 “Basis of Structural Timber Design from Research to Standards”

Working Group 4

“Hybrid Timber Structures”

Member fact sheets

Table of Contents

Prof. Dr. Alfredo Geraldes Dias – WG4 Leader (Portugal)
University of Coimbra
Coimbra Portugal
alfgdias(at)dec.uc.pt
COST FP1402, MC Member, WG4 Leader

Personal	*Organisation*		
Years of experience in relevant field: 10 Expertise: Timber composites Connections in timber composites Degree: PhD (04.04.2005)	Civil Engineering (www.uc.pt/fctuc/dec) Focus: theoretical and practical research / innovation, and education and training Facilities: Testing lab facility for timber structures and products Specific testing equipment for timber structures and products		
	No. of staff	PhD students	MSc/year
	3	5	6

Research projects

WG4

LOGCORK - "Sustainability in construction through the incorporation of materials optimized by nature", 3 years (2010-2013), Alfredo Dias, Helena Cruz, Sandra Monteiro

Ecotabuleiro – "Road bridges for rural areas made with roundwood members", 2.5 years (2013-2015), Alfredo Dias and Sandra Monteiro.

WG3

Mechanical assessment of glued based connetion for structural timber members, 3 years (2005-2008), Alfredo Dias.

Publications

WG1

- Dias, A. M. P. G., A. R. D. Martins, L. M. C. Simões, P. P. and A. Andrade (2015). "Statistical Analysis of the Load Slip Behaviour in Timber-Concrete Connections." Computers and Structures

WG2

- Jorge, L. F. C. and A. M. P. G. Dias (2013). "X-Lam panels in swimming-pool building – monitoring the environment and the performance." journal Advanced Materials Research 778.

WG3

- Dias, A. M. P. G. and L. F. C. Jorge (2011). "The effect of ductile connectors on the behaviour of timber-concrete composite beams." Engineering Structures 33(11): 3033-3042.

- Morgado, T. F. M., A. M. P. G. Dias, J. S. Machado and J. H. Negrao (2013). "Structural Connections for Small-Diameter Poles." Journal of Structural Engineering 139(11)

WG4

- Santos, P. G. G., A. M. P. G. Dias, C. E. J. Martins and L. Godinho (2015). "Vibration Testing and Modeling of a Reinforced Timber-Concrete Composite Floors." Journal of Structural Engineering - ASCE

- Monteiro, S. R. S., A. M. P. G. Dias and S. M. R. Lopes (2014). "Bi-dimensional numerical modeling of timber–concrete slab-type structures." Materials and structures 37(2): 50-65.

- Dias, A. M. P. G. (2012). "Analysis of the Nonlinear Behavior of Timber-Concrete Connections." JOURNAL OF STRUCTURAL ENGINEERING-ASCE 138(9): 1128-1137

Prof. Dr. Jörg Schänzlin – WG4 Vice leader (Germany)
Hochschule Biberach
Biberach Germany
schaenzlin(at)hochschule-bc.de
COST FP1402, MC Substitute, WG4 Vice Leader

Personal	*Organisation*
Years of experience in relevant field: 15 Expertise: Timber-concrete-composite structures; long term behaviour Degree: Habilitation (01.12.2010)	Institut für Holzbau (http://www.hochschule-biberach.de/web/ifh) Focus: theoretical research / innovation, design of structures and education /training Facilities: one small testing lab; databases about built timber structures;

No. of staff	PhD students	MSc/year
3	0	1

Research projects

Brettstapel-Beton-Verbunddecken mit integriertem Slim-Floor-Profil. DBU-AZ 21168 , Universtität Stuttgart, Institut für Konstrktion und Entwurf, Prof. Dr.-Ing. U. Kuhlmann

Baukostensenkung durch weiterentwickelte Brettstapel-Beton-Verbunddecken. Schlußbericht zum Forschungsvorhaben im Auftrag des Bundesamt für Bauwesen und Raumordnung (BBR), BS 34-8001 00-1/124-3-6-7, 2002, Universtität Stuttgart, Institut für Konstrktion und Entwurf, Prof. Dr.-Ing. U. Kuhlmann

Erweiterung des Anwendungsbereiches von Holz-Beton-Verbunddecken durch Erfassung von Kriechen und Schwinden am Beispiel der Brettstapel-Beton-Verbunddecke. Schlußbericht zum Forschungsvorhaben AiF 12421N im Auftrag def DGfH, 2002, Universtität Stuttgart, Institut für Konstrktion und Entwurf, Prof. Dr.-Ing. U. Kuhlmann

Publications

Jorge, L.; Schänzlin, J.; Lopes, S.; Cruz, H.; Kuhlmann; U.: Time-dependent behaviour of timber lightweight concrete composite floors. Eng Struct 32(12):3966 - 3973. doi, 2010

Schänzlin, J.: Modeling the long-term behavior of structural timber for typical seviceclass-II-conditions in South-West Germany, Habilitation, Institut für Konstruktion und Entwurf, Universität Stuttgart Nr. 2010-2

Schänzlin, J.; Fragiacomo, M.: Extension of EC5 Annex B Formulas for the Desing of Timber-concrete Composite Structures. In: CIB – W18. Proccedings of the International Council for Research and Innovation in Building and Construction, Working Commission W18 – Timber Structures, Meeting Forty, August 2007, Bled, Slovenia

Schänzlin, J.: Zum Langzeitverhalten von Brettstapel-Beton-Verbunddecken. Mittei-
lungen des Instituts für Konstruktion und Entwurf, Nr. 2003-2, PhD-thesis

Mr. Boštjan Ber (Slovenia)
University of Maribor, Faculty of civil engineering
Maribor Slovenia
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COST FP1402, WG4 Member

Personal	*Organisation*
Years of experience in relevant field: 6 Expertise: - Design of timber structures (general) - Modelling & design of timber-glass hybrid structures Degree: BSc. (05.06.2008)	Faculty of civil engineering, department for analysis of structures (www.fg.um.si ; www.kager-house.com) Focus: theoretical and practical research / innovation and design of structures Facilities: Testing lab, equiped with a static tensile loading machine (approx. capacity 30kN) and a costumized multifunctional machine for testing timber frame-panel walls (approx. capacity 100kN).

No. of staff	PhD students	MSc/year
10	6	5

Research projects

- WoodWisdom-Net, http://www.woodwisdom.net/
- COST Action TU0905 (Structural Glass), http://www.glassnetwork.org/

Publications

Ber B., Premrov M., Strukelj A., Kuhta M. (2014) Experimental investigations of timber-glass composite wall panels. Construction and Building Materials 66 (2014) 235–246. http://dx.doi.org/10.1016/j.conbuildmat.2014.05.044

Ber B., Sustersic I., Dujic B., Jancar J., Premrov M. (2014) Seismic shaking table testing of glass-timber buildings. Proceedings of the World Conference of Timber Engineering – Alexander Salenikovich (Ed), Quebec City, Canada, 10–14 August 2014, ABS643.

Ber B., Premrov M., Strukelj A., Sustersic I., Dujic B. (2014) Static and dynamic testing of timber-glass composite wall panels. Proceedings of the Challenging Glass 4 & COST TU0905 Final Conference – Louter, Bos, Belis & Lebet (Eds), EPFL, Lausanne, Switzerland, 6-7 February 2014, 219–227.

Ber B., Premrov M., Sustersic I., Dujic B. (2013) Innovative earthquake resistant timber-glass buildings. Natural Science, Vol.5, No.8A1, 63-71 (2013). http://dx.doi.org/10.4236/ns.2013.58A1008

Ber B., Sustersic I., Jancar J., Premrov M., Dujic B. (2013) Shake table testing of one- and two-story glass-timber structures. Proceedings of the International Conference on Earthquake Engineering, Skopje, Macedonia, 29-31 May 2013.

Prof. Dr. Jose L. Fernandez-Cabo (Spain)
ETS de Arquitectura de Madrid
Madrid Spain
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COST FP1402, WG4 Member

Personal	*Organisation*		
Years of experience in relevant field: 20 Expertise: Maybe in timber composite structures, timber trusses. Degree: PhD. Architect (01.01.1998)	Structural Department (www.aq.upm.es) Focus: theoretical and practical research / innovation and education / training Facilities: Regular Testing Lab.		
	No. of staff	PhD students	MSc/year
	40	2	15

Research projects

Name of the project: Definition of a Protocol for the Refurbishment of Timber Floors by the Connection with the new Concrete Topping.
Funded by: Education and Science Ministery
Duration: 2004-2007.

Name of the project: HOLIWOOD: Holistic implementation of European thermal treated hard wood in the sector of construction industry ana noise protection by sustainable, knowledge-based and value added products"
Funded by: Comunidad Europea VI Programa Marco (2004-2008)
Duration:2005-2009.

Publications

Fernández Cabo, Jose Luis; Fernández-Lavandera, Jorge; Avila Jalvo, Jose Miguel. "Wood-Concrete and Wood-Wood Mixed Beams: Rational Basis for Selecting Connections". JOURNAL OF STRUCTURAL ENGINEERING. Vol. 134, 3, 440-447. 2008.

Fernandez-Cabo, José L.; Arriaga-Martitegui, Francisco; Majano-Majano, Almudena; Iñiguez, Guillermo. "Short-term performance of the HSB® shear plate type connector for timber-concrete composite beams". Construction and Building Materials 30 (2012) 455–462

Fernandez-Cabo, José L; Fernandez-Lavandera, Jorge; Diez Barra, Rafael, Avila Jalvo, Jose Miguel "Timber Composite Beams with a Discrete Connection System". 2012. http://dx.doi.org/10.1680/stbu.11.00007. STRUCTURES AND BUILDINGS, ICE. 16p.

Carina Fonseca Ferreira, Dina D'Ayala, Jose. L. Fernandez Cabo,and Rafael Díez. "Numerical Modelling of Historic Vaulted Timber Structures". ADVANCED MATERIALS RESEARCH. Vol. 778 (2013) pp 517-525. Doi:10.4028/www.scientific.net/AMR.778.517

José L. Fernández-Cabo, Robert Widmann, Marina Arce-Blanco, Roberto Crocetti, José Xavier, Almudena Majano-Majano. Assessment of wire-frame analysis models of a historical planked timber archAccepted on March 2015 for its publication in BUILDING AND STRUCTURES, Proceedings of the Institution of Civil Engineers, UK.

Carina Fonseca Ferreira, Dina D'Ayala, Jose L. Fernandez Cabo, Marina Arce Blanco, Rafael Díez Barra, Pedro Hurtado Valdez (2015): Numerical Modelling and Seismic Assessment of Historic Planked Timber Arches. International Journal of Architectural Heritage. DOI: 10.1080/15583058.2015.1041194

Dr. Beatriz Gil (Spain)
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Pamplona, Spain
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COST FP1402, WG4 Member

Personal	*Organisation*
Years of experience in relevant field: 4 Expertise: Composite steel concrete structures; Structural design; Semi-rigid Connections; Numerical modelling Degree: PhD (15.09.2006)	Department of Building Construction, Services and Structures (www.unav.es/madera) Focus: theoretical and practical research / innovation, design of structures and education/training. Facilities: Testing lab with loader carnet cells up to 400 kN, specialized in building components and materials characterisation. Computer Numerical Control (CNC). Laser cutting printer. 3D print

No. of staff	PhD students	MSc/year
5	1	-

Research projects

- RETICC - structures durability: REinforcemet of TImber and Concrete Constructions. (2011). http://www.unav.edu/centro/madera/reticc
- esMADERA (isWOOD). efficient and sustainable: Timber Applied to the Design of High Performance Structures (2008-2011). http://www.unav.edu/centro/madera/esmadera
- Timber mechanical connections. (2012-2015) http://www.unav.edu/centro/madera/optimizaciondeunionesmecanicasdemadera
- New applications, treatments and products for beechwood. (2011-2013) http://www.unav.edu/centro/madera/nuevos-mercados-para-la-madera-de-haya
- Characterisation, modelling and automated design of 3D semi-rigid steel joints. (2015-2018). http://www.structuralconnections.es
- Analysis and design of 3D semi-rigid connections in steel and concrete structures (2007-2016)

Publications

- Cabrero JM, Gebremedhin K (2008) Finite Element Model for Predicting Stiffness of Metal-Plate Connected Tension Splice and Heel Joints of Wood Trusses, Transactions of the ASABE.
- Gil B, Goñi R (2015) T-Stub behaviour under out-of-plane bending. I: Experimental research and finite element modelling. Engineering Structures.
- Gil B, Bijlaard FSK, Bayo E (2015) T-Stub behaviour under out-of-plane bending. II: Parametric Study and analytical characterization. Engineering Structures.
-- Gil B, Goñi R, Bayo E (2013) Experimental and numerical validation of a new design for three-dimensional semi-rigid composite joint under general loads
- Cabrero JM, Heiduschke A, Haller P (2010) Analytical assessment of the load carrying capacity of axially loaded wooden reinforced tubes, Composite Structures.
- Blanco C, Cabrero JM, Martin-Meizoso A, Gebremedhin KG (2015) Design oriented failure model for wood accounting for different tensile and compressive behavior. Mechanics of
Materials.
- Cabrero JM, Blanco C, Gebremedhin KG, Martín Meizoso A (2012) Assessment of phenomenological failure criteria for wood. European Journal of Wood and Wood Products.
- Cabrero JM, Vargas G (2015) Analysis of the validity of the three-point off-axis bending method. Applied Mathematical Modelling.
- Iraola B, Cabrero JM, Gil B (2015) A three dimensional direction dependent wood model. Wood Science and Technology (under review)

Dr. Ivan Giongo (Italy)
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Trento, Italy
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COST FP1402, WG4 Member

Personal	*Organisation*		
Years of experience in relevant field: 6 Expertise: Timber-to-timber composite structures with incomplete interaction Timber connections Timber diaphragms (CLT panels as original decking or reinforcing elements) Degree: PhD (29.04.2013)	- (http://lpms.dicam.unitn.it/?page_id=176) Focus: theoretical and practical research / innovation and education/training. Facilities: please refer to : http://lpms.dicam.unitn.it/?page_id=176		
	No. of staff	PhD students	MSc/year
	3	3	160

Research projects

SERIES Project - Seismic performance of multi-storey timber buildings (2010-2013) -
European Framework Program 7. Duration 36 months. People of my organization involved: 7. Webpage:
http://www.series.upatras.gr/TIMBER_BUILDINGS

RELUIS Project – Timber structures (2010-2013) - DPC-ReLUIS (National Network of Seismic University). Duration 36 months. People of my organization involved: 7. Webpage: http://www.reluis.it/index.php?lang=en

RELUIS Project – Timber structures in earthquake prone areas (2014-2016) - DPC-ReLUIS (National Network of Seismic University). Duration 36 months. People of my organization involved: 6. Webpage: http://www.reluis.it/index.php?lang=en

Long term out-of-plane testing of compound CLT diaphragms (joists + CLT panels).

Ongoing project. Expected duration 18-36 months

Publications

Piazza M., Tomasi R., Crosatti A., Theoretical and experimental analysis of timber-to-timber joints connected with inclined screws, Construction and Building Materials 24, 9 (2010), pp. 1560–1571

Zonta D., Loss C., Piazza M., Zanon P., Direct Displacement Based Design of glulam timber frame buildings, Journal of Earthquake Engineering, Taylor & Francis,2010

Andreolli M., Piazza M., Tomasi R., Zandonini R., Ductile moment resistant steel-timber connections, SPECIAL ISSUE IN TIMBER ENGINEERING, Proceedings of the Institution of Civil Engineers - Structures and Buildings, Vol. 164, Issue 2, 2011, p. 65-78, ISSN: 0965-0911

C. Loss, D. Zonta, M. Piazza (2013), On estimating the seismic displacement capacity of timber portal-frames, Journal of Earthquake Engineering, 17:879–901, 2013 (available on line: DOI:10.1080/13632469.2013.779333)

Tomasi, R. and Smith, I. (2014). "Experimental Characterization of Monotonic and Cyclic Loading Responses of CLT Panel-To-Foundation Angle Bracket Connections." J. Mater. Civ. Eng. , 10.1061/(ASCE)MT.1943-5533.0001144 , 04014189.

Giongo I., Piazza M., Tomasi R., "Cambering of timber composite beams by means of screw fasteners". SAHC - 2012, Journal of Heritage Conservation, Vol. 32-2012

Giongo I., Piazza M., Tomasi R., "Investigation on the self tapping screws capability to induce internal stress in timber elements". Advanced Materials Research, 778, 604 611. doi:10.4028/www.scientific.net/AMR.778.604

Ms. Katarzyna Hamrol-Bielecka (Poland)
Wroclaw University of Technology
Wroclaw, Poland
katarzyna.hamrol(at)pwr.wroc.pl
COST FP1402, MC Substitute, WG4 Member

Personal	*Organisation*		
Years of experience in relevant field: 1 Expertise: Nondestructive testing of wood Degree: MSc, Eng. (13.07.2011)	Division of Building Materials, Timber and Monumental Heritage Struct. (zmb.pwr.wroc.pl and www.ib.pwr.wroc.pl) Focus: theoretical and practical research / innovation, design of structure and education / training Facilities: Accredited Laboratory at the Institute of Building Engineering		
	No. of staff	PhD students	MSc/year
	20	5	-

Research projects

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Publications

-

Prof. Richard Harris (United Kingdom)
The University of Bath, Time for Timber
Bath, England
r.harris(at)bath.ac.uk; timefortimber(at)btinternet.com
COST FP1402, MC Member, Dissemination/Practical application, WG 4 Member

Personal	*Organisation*
Years of experience in relevant field: 40 Expertise: Timber engineering design, Tall timber buildings, Timber-concrete composites, Connections Degree: BSc (01.07.1972)	The University of Bath (http://www.bath.ac.uk/ace/people/harris/) Focus: theoretical and practical research / innovation, and education and training Facilities: Small structural engineering lab, various facilities in other departments

No. of staff	PhD students	MSc/year
4	7	90

Research projects

Serviceability of Tall Timber Buildings under Wind Load, three plus one year, Thomas Reynolds, Wen-Shao Chang, Richard Harris

Fire and structural performance of non-metallic timber connections, 3 years, Daniel Brandon, Peter Walker, Martin Ansell, Richard Harris

Thin Topping Timber-Concrete Composite Floors, 3 years, Jonathan Skinner, Peter Walker, Martin Ansell, Richard Harris

Structural Dynamics, Ongoing PhD projects, Haoyu Huang, Wen-Shao Chang, Richard Harris

Drying Effects in Flooded Timber Structures, 3 years, Alistair Bradley, Wen-Shao Chang, Richard Harris

Publications

Reynolds, T., Harris, R., Chang, W.-S., Bregulla, J. and Bawcombe, J., 2015. Forthcoming. Output-only modal analysis of a multi-storey cross-laminated timber building. Proceedings of the Institution of Civil Engineers: Construction Materials:

Bradley, A., Chang, W.-S. and Harris, R., 2015. Forthcoming. The effect of drying on timber frame connections post flooding. Proceedings of the Institution of Civil Engineers: Construction Materials:

Skinner, J., Bregulla, J., Harris, R., Paine, K. and Walker, P., 2014. Screw connectors for thin topping, timber-concrete composites. Materials and Structures, 47 (11), pp. 1891-1899.

Reynolds, T., Harris, R. and Chang, W., 2014. Nonlinear pre-yield modal properties of timber structures with large-diameter steel dowel connections. Engineering Structures, 76, pp. 235-244.

Dr. Violeta Jakimovska-Popovska (fYR Macedonia)
Ss. Cyril and Methodius University - Skopje
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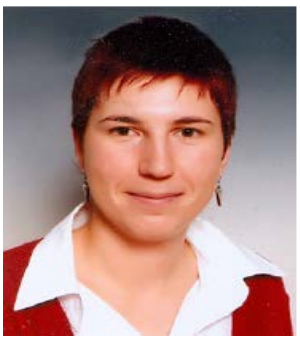
COST FP1402, WG4 Member



Personal

Years of experience in relevant field: -
Expertise: Wood composite materials
Degree: PhD. (20.11.2014)

Organisation

Faculty of design and technologies of furniture and interior - Skopje (www.fdtme.ukim.edu.mk)

Focus: education /training

Facilities: Laboratory for testing furniture equipped with testing machines for windows, doors, fasades and furniture elements. Universal tsting machine for mechanical properties of wood.

No. of staff	PhD students	MSc/year
2	0	0

Research projects

Researches of the characteristics of structurally reinforced constructive plywood-doctoral dissertation (Violeta Jakimovska Popovska), supervisor: Prof. Borche liev, PhD.

Within this research a structural hybrid composites were made (structural plywood reinforced with glass fiber and cotton fiber preimpregnated fabrics) for use in construction.

Research on the characteristics of modified multilayer structural plywood, National scientific research project funded by the Ministry of education and science of the Republic of Macedonia, main researcher: prof. Borche Iliev, PhD, young researcher: assistant Violeta Jakimovska Popovska, project time: 01.06.2010-31.05.2012.

WBP wood based composites and its characteristics, scientific research project funded by the Ss. Cyril and Methodius University in Skopje, main researcher: prof. Borche Iliev, researcher: assistant Violeta Jakimovska Popovska, project time: 01.10.2012 - 01.09.2013.

Publications

JAKIMOVSKA POPOVSKA, V., Iliev, B., Mihajlova, J. (2014): Water resistance of plywood bonded with alcohol-soluble-phenol-formaldehyde resin, Scientific journal - Innovations in woodworking industry and engineering design, 1/2014 (5): 127-136.

JAKIMOVSKA POPOVSKA, V., Iliev, B. (2014): Tensile strength in different directions of plywood made from beech veneers, Scientific journal - Innovations in woodworking industry and engineering design, 2/2014 (6): 65-71.

JAKIMOVSKA POPOVSKA, V., Iliev, B. (2013): Influence of plywood structure on compressive strength parallel to the plane of the panel, Proceedings of international scietific conference “Wood technology & product design”, pg. 194-200, Ohrid, Republic of Macedonia.

Aziri, B., JAKIMOVSKA POPOVSKA, V., Iliev, B. (2013): Water impact on the change of the physical characteristics of multilayered constructive plywood, Proceedings of international scientific conference “Wood technology & product design”, pg. 225-232, Ohrid, Republic of Macedonia.

JAKIMOVSKA POPOVSKA, V., Iliev, B. (2013): Research on the characteristics of laboratory made plywood, Proceedings of 9th international scientific conference on production engineering “Development and modernization of products-RIM 2013”, pg. 717-724, Budva.

JAKIMOVSKA POPOVSKA, V., Aziri, B., Iliev, B. (2014): Water impact on the change of the physical characteristics of combined water-resistant wood based panels. Proceedings of the 25st International scientific conference „New materials and technologies in the function of wooden products”, 17 October, 2014, Zagreb, Croatia, pg. 145-152.

Mr. Benjamin Kreis (Switzerland)
ETH Zürich
Zurich Switzerland
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COST FP1402, WG4 Member

Personal	*Organisation*
Years of experience in relevant field: 1 Expertise: mechanical modelling, testing methods and configurations Degree: MSc Civil Engineer (04.03.2015)	Institute of Structural Engineering (IBK) (www.ibk.ethz.ch) Focus: theoretical and practical research / innovation, design of structures and education/training. Facilities: different testing machines (to perform tensile, compression, bending, shear, ...tests), measuring instruments (inductive, optical, ...), climate chambers

No. of staff	PhD students	MSc/year
13	9	60

Research projects

WG 1: Influence of varying material properties on the load-bearing capacity of glued laminated timber

Dr. Gerhard Fink, Dr. Jochen Köhler, Prof. Dr. Andrea Frangi

Completed (10.02.2009 – 30.12.2014)

https://www.rdb.ethz.ch/projects/project.php?proj_id=27423

WG 2: (1) Biaxial timber slab using hardwood - ETH HoNR; 2011 - ongoing; F. Wanninger, A. Frangi; http://www.honr.ethz.ch/en/the-group/structural-system/composite-floor-slab.html (2) Fire behavior of cross-laminated solid timber panels; ongoing; M. Klippel, A. Frangi, M. Fontana, http://www.ibk.ethz.ch/fr/research/Klippel1/index_EN

WG 3: (1) Post-tensioned timber structures; Flavio Wanninger, Jelena Ogrizovic, Prof. Dr. Andrea Frangi; Ongoing (01.03.2010); https://www.rdb.ethz.ch/projects/project.php?proj_id=26754 (2) Reliable timber and innovative wood products for structures - Beam-type structural elements made of LVL beech wood; Peter Kobel, Prof. Dr. Andrea Frangi; Ongoing (01.01.2012); https://www.rdb.ethz.ch/projects/project.ph

WG 4: Timber-concrete composite slab using beech wood plates; ongoing; L. Boccadoro, A. Frangi; http://www.honr.ethz.ch/en/the-group/structural-system/composite-floor-slab.html

Publications

WG 1: Modelling the Bending Strength of Glued Laminated Timber - Considering the Natural Growth Characteristics of Timber, G. Fink; A. Frangi; J. Kohler, 46th Annual Meeting on Timber Structures 2013

WG 2: Fire tests on Loaded Cross-Laminated Timber Wall and Floor Elements; M. Klippel, C. Leyeder, A. Frangi; 11th International Symposium on Fire Safety Science; 2014

WG 3: (1) Experimental and analytical analysis of a post-tensioned timber connection under gravity loads, Wanninger, F; Frangi, A, Engineering Structures 2014, 70, 117-129 (2) Fully Threaded Self-tapping Screws Subjected to Combined Axial and Lateral Loading with Different Load to Grain Angles, Jockwer, Robert; Steiger, René; Frangi, Andrea, Materials and Joints in Timber Structures 2014, 9, 265-272 (3) Experimental Analysis on the Structural Behaviour of Connections with LVL Made of Beech Wood, Kobel, Peter; Steiger,

René; Frangi, Andrea, Materials and Joints in Timber Structures 2014, 9, 211-220

WG 4: (1) Elasto-Plastic Model for Timber-Concrete Composite Beams with Ductile Connection; A. Frangi, M. Fontana; Struct. Eng. Int., 13/1; 2003 (2) Experimental analysis on the structural behavior of timber-concrete composite slabs made of beech-laminated veneer lumber; L. Boccadoro, A. Frangi; Journal of Performance of Constructed Facilities; 2013 (3) Brandschutzkonzepte im Holz-Beton-Verbundbau; A. Frangi; Bau und Wissen Fachveranstaltung Holz-Beton-Verbunddecken in Theorie und Praxis; 2012

Mr. Frank Kupferle (France)
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Mundolsheim, France
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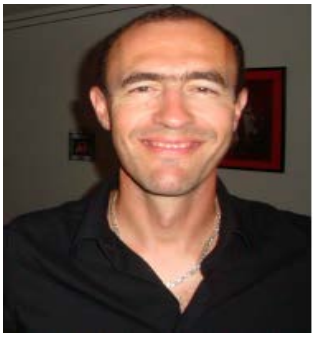
COST FP1402, WG4 Member



Personal

Years of experience in relevant field: 12

Expertise: Wood-based I-joists and Engineered wood products ; day-to-day application of EC5 ; connections and reinforcements ; hybrid (timber-concrete) structures ; vibration

Degree: Ingénieur Civil des Mines(Nancy) (30.06.1995)

Organisation

C4Ci (www.c4ci.eu)

Focus: practical research / innovation, design of structures and education/training.

Facilities: none (except computers and typical design related software)

No. of staff	PhD students	MSc/year
3	0	1

Research projects

[WG 1] Development of design methodologies to EC5 for traditional carpentry joints, based on calibration from tests realised by the timber industry in France (sponsored by CODIFAB). Involved 3 people (1 Master student). 12 Months. [Recent]

[WG 1] Technical-economical analysis of various vibration design criteria based on large scale litterature review (standards worldwide, NAs to EC5 , research/publications), for : lightweight or heacy timber/I-joist floor, CLT, attic trusses (sponsored by CODIFAB). will involve 2 people. 6 months [Current - about to start]

[WG 1] Extension of design methodologies to EC5 for traditional carpentry joints to Fire Design (sponsored by CODIFAB). [Current - just starting]

[WG 3] Proposition of simplified design methods for dowel-type joints to EC5 (sponsored by CODIFAB). Involves 2 people . 6 months. [Recent]

[WG 4] Hybrid Timber Structures in normal and Fire situation, review of existing research work and proposed methodologies, analysis of technical-economical implications of their applications on two types of connections (notch combined with dowels, dowel type fasteners alone). (Sponsored by CODIFAB). Involves 3 people (1 Master student). 6 Months [Current - WIP]

Publications

No scientifical publications : work sponsored by CODIFAB may be publisehd in form of reports or guides by this public organsation.

Prof. Dr. Andreja Kutner (Slovenia)
University of Primorska
Koper, Slovenia
andreja.kutnar(at)upr.si
COST FP1402, WG4 Member

Personal	*Organisation*		
Years of experience in relevant field: 10 Expertise: Thermo-hydro mechanical treatment of wood, wood-based composites, adhesive bonding, environmental impact assessment Degree: PhD. (22.10.2008)	Andrej Marušič Institute (http://www.upr.si/) Focus: theoretical and practical research / innovation and education/training. Facilities: DMA, universal testing machine Zwick 50kN, access at Brest pohištvo d.o.o.: Hot Press LZT-UK-30-L Langzauner		
	No. of staff	PhD students	MSc/year
	5	1	15

Research projects

1. H2020 Teaming Renewable materials and healthy environments research and innovation centre of excellence (InnoRenew CoE), 2015-2016. http://innorenew.eu/sl/news

2. Grant holder and chair of COST Action FP1407 “Understanding wood modification through an integrated scientific and environmental impact approach (ModWoodLife), 2014-2019. http://cost.famnit.upr.si/en/

3. WoodWisdom-ERA-net+: Cascading Recovered Wood (CaReWood), 2014-2017. http://carewood.eu/

4. WoodWisdom-ERA-net+: What We Wood Believe? Societal perceptions of the forest-based sector and its products towards a sustainable society (W3B Wood Believe), 2014-2017. http://wood-w3b.eu/index.php/en/

National Slovenian research projects

• Z4-5520-1669 Rheological properties of thermo-hydro-mechanically treated wood, 1.8.2013—31.7.2015

Publications

1. KITEK KUZMAN, Manja, KUTNAR, Andreja. Contemporary Slovenian timber architecture for sustainability, (Green energy and technology). Cham [etc.]: Springer, cop. 2014. XIX, 163p.

2. KUTNAR, Andreja, KAMKE, Frederick A., ŠERNEK, Milan. Density profile and morphology of viscoelastic thermal compressed wood. Wood Science and Technology, ISSN 0043-7719, 2009, vol. 43, no. ½: 57-68.

3. KUTNAR, Andreja, SANDBERG, Dick, HALLER, Peer. Compressed and moulded wood from processing to products - a review. Holzforschung, ISSN 1437-434X. [Online ed.], 2015:1-13.

3. Kutnar Andreja, Kamke Frederick A., Petrič Marko, Šernek Milan. The influence of viscoelastic thermal compression on the chemistry and surface energetics of wood. Colloids and surfaces. A, Physicochemical and Engineering Aspects 329 (2008) 82-86. doi: doi:10.1016/j.colsurfa.2008.06.047. Times cited: 14

4. Rautkari Lauri, Laine Kristiina, Kutnar Andreja, Medved Sergej, Hughes Mark. Hardness and density profile of surface densified and thermally modified Scots pine in relation to degree of densification. Journal of Materials Science 48 (6) (2013) 2370-2375. doi: 10.1007/s10853-012-7019-5. Times cited: 9

5. Kutnar Andreja, Kamke Frederick A. Influence of temperature and steam environment on set recovery of compressive deformation of wood. Wood Science and Technology 46 (5) (2012) 953-964. doi: 10.1007/s00226-011-0456-5. Times cited: 9

Dr. Adrian Leijten (the Netherlands)
Eindhoven Technical University
Eindhoven, the Netherlands
adleijten(at)hotmail.com
COST FP1402, MC Member, WG4 Member

Personal

Years of experience in relevant field: 26

Expertise: Structural Timber and Bamboo, connections, dvw reinforced connections, background Eurocode 5.

Degree: - (-)

Organisation

Department of the Build Environment (https://www.tue.nl/en/university/department)

Focus: theoretical and practical research /innovation, design of structures and education/ training

Facilities: see website

No. of staff	PhD students	MSc/year
2	3	10

Research projects

stresses analyses of non-prismatic timber beams and portal frame corners;

bearing or support stresses perpendicular to grain;

splitting of beams caused by connections perpendicular to grain;

stress concentration of notched beams;

structural assessment and repair of historic timber structures and foundations;

climate effects on wooden decorated panels;

structural behaviour of historic timber connections;

high rise timber buildings, in-fill frame options, (dvw) reinforced connections;

wood based panel products; determination of design rules for application as integrated roof-, floor- and wall elements;

bamboo used as structural elements

Publications

ISI Brandon, D. & Leijten, A.J.M. (2014). Advances in moment transferring dvw reinforced timber connections : numerical analyses and verification, Part 2. Construction and Building Materials, 56, 32-43. doi: 10.1016/j.conbuildmat.2014.01.026

ISI Leijten, A.J.M. & Schoenmakers, J.C.M. (2014). Timber beams loaded perpendicular to grain by multiple connections. Engineering Structures, 80, 147-152. doi: 10.1016/j.engstruct.2014.08.048

Jorissen, A.J.M., Castelijns, L.J.J., Van Rie, J.L.G. & Hofmeyer, H. (2014). Sandwich panels with holes. In A Salenikovich (Ed.), Proceedings of the World Conference on Timber (WCTE) 2014, 10-14 August 2014, Quebec, Canada (pp. 1-11). Quebec city: FPInnovations.

Brandon, D. & Leijten, A.J.M. (2014). Behaviour of bond lines in dvw reinforced timber connections. In A. Salenikovitch (Ed.), Proceedings of the World Conference on Timber Engineering (WCTE 2014), 10-14 Aug

Wrzesniak, D., Fragiacomo, M. & Jorissen, A.J.M. (2014). Alternative approach to avoid brittle failure in dowelled connections. In S. Aicher, H.W. Reinhardt & H. Garrecht (Eds.), Materials and joints in timber structures : recent developments of technology (RILEM Bookseries, 9) (pp. 273-287). Springer. http://repository.tue.nl/770181

Dr. Elzbieta Barbara Lukaszweska (Poland)
Byggnadstekniska Byrån BTB
Stockholm, Sweden
elzbieta.lukaszewska(at)btb.se
COST FP1402, WG4 Member

Personal	*Organisation*		
Years of experience in relevant field: 0 Expertise: Prefabricated timber-concrete composite structures - connections Degree: PhD. (30.09.2009)	Structural Engineering (www.btb.se) Focus: design of structures Facilities: not relevant		
	No. of staff	PhD students	MSc/year
	90	3	5

Research projects

Master Thesis project which will be started in autumn and will be focused on analysis of vibrations of prefabricated timber-concrete composite structures with connection studied in Doctoral Thesis of mine.

Publications

Any reports, articles published yet in 2014-2015.

Ms. Sandra Monteiro (Portugal)
University of Coimbra
Coimbra Portugal
sandra(at)dec.uc.pt
COST FP1402, WG4 Member

Personal	*Organisation*		
Years of experience in relevant field: - Expertise: Modelling and experimental testing of timber-concrete floors; modelling and testing of timber concrete notched connections. Degree: Master in Civil Engineer (05.05.2009)	Civil Engineering (www.uc.pt/fctuc/dec) Focus: theoretical and practical research / innovation and education /training Facilities: Testing lab facility for timber structures and products Specific testing equipment for timber structures and products		
	No. of staff	PhD students	MSc/year
	3	5	6

Research projects

WG4

LOGCORK - "Sustainability in construction through the incorporation of materials optimized by nature", 3 years (2010-2013), Alfredo Dias, Helena Cruz, Sandra Monteiro

Ecotabuleiro – "Road bridges for rural areas made with roundwood members", 2.5 years (2013-2015), Alfredo Dias and Sandra Monteiro.

WG3

Mechanical assessment of glued based connetion for structural timber members, 3 years (2005-2008), Alfredo Dias.

Publications

WG1

- Dias, A. M. P. G., A. R. D. Martins, L. M. C. Simões, P. P. and A. Andrade (2015). "Statistical Analysis of the Load Slip Behaviour in Timber-Concrete Connections." Computers and Structures

WG2

- Jorge, L. F. C. and A. M. P. G. Dias (2013). "X-Lam panels in swimming-pool building – monitoring the environment and the performance." journal Advanced Materials Research 778.

WG3

- Dias, A. M. P. G. and L. F. C. Jorge (2011). "The effect of ductile connectors on the behaviour of timber-concrete composite beams." Engineering Structures 33(11): 3033-3042.

- Morgado, T. F. M., A. M. P. G. Dias, J. S. Machado and J. H. Negrao (2013). "Structural Connections for Small-Diameter Poles." Journal of Structural Engineering 139(11)

WG4

- Santos, P. G. G., A. M. P. G. Dias, C. E. J. Martins and L. Godinho (2015). "Vibration Testing and Modeling of a Reinforced Timber-Concrete Composite Floors." Journal of Structural Engineering - ASCE

- Monteiro, S. R. S., A. M. P. G. Dias and S. M. R. Lopes (2014). "Bi-dimensional numerical modeling of timber–concrete slab-type structures." Materials and structures 37(2): 50-65.

- Dias, A. M. P. G. (2012). "Analysis of the Nonlinear Behavior of Timber-Concrete Connections." JOURNAL OF STRUCTURAL ENGINEERING-ASCE 138(9): 1128-1137

Dr. Tomasz Nowak (Poland)
Wroclaw University of Technology
Wroclaw, Poland
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COST FP1402, MC Member, WG4 Member

Personal	*Organisation*
Years of experience in relevant field: 14 Expertise: historic timber structures, strengthening, repair, non-destructive testing, epoxy resins, FRPs Degree: PhD (21.11.2007)	Faculty of Civil Engineering (www.wbliw.pwr.edu.pl) Focus: theoretical and practical research/innovation, education/training and examination of existing structures Facilities: The Testing Laboratory of the Faculty of Civil Engineering has been granted the accreditation of the Polish Centre for Accreditation

No. of staff	PhD students	MSc/year
-	-	-

Research projects

Innovative methods of modifications of timber glulam girders by using internal reinforcement. No. N N506 048640. Principal Investigators: Jasieńko J, Nowak T. Sponsoring Agency: National Science Center, Poland. 8 persons involved. Duration: 2011-2014.

COST Action FP1004 "Enhance mechanical properties of timber, engineered wood products and timber structures". Duration: 2011-2015.

COST Action FP1101 "Assessment, Reinforcement and Monitoring of Timber Structures". Duration: 2011-2015.

Publications

Jankowski L.J., Nowak T. (2015) Experimental assessment of the glued laminated timber beams in 4-point bending tests and photoelastic coating technique. Solid State Phenomena (accepted)

Ilharco T, Lechner T., Nowak T (2015) Assessment of timber floors by means of non-destructive testing methods. Construction and Building Materials (2015), doi:10.1016/j.conbuildmat.2015.05.133

Jasieńko J., Nowak T. (2014) Solid timber beams strengthened with steel plates – Experimental studies. Construction and Building Materials 63: 81-88.

Lechner T., Nowak T., Kliger R. (2014) In situ assessment of the timber floor structure of the Skansen Lejonet fortification, Sweden. Construction and Building Materials 58: 85-93.

Jasieńko J., Nowak T., Bednarz Ł. (2014) The baroque structural ceiling over the Leopoldinum Auditorium in Wrocław University - tests, conservation and a strengthening concept. International Journal of Architectural Heritage 8(2): 269-289.

Nowak T., Jasieńko J., Czepiżak D. (2013) Experimental tests and numerical analysis of historic bent timber elements reinforced with CFRP strips. Construction and Building Materials 40: 197-206.

Jasieńko J., Nowak T., Hamrol K. (2013) Selected methods of diagnosis of historical timber structures - principles and possibilities of assessment. Advanced Materials Research 778: 225-232.

Dr. Gary Raftery (New Zealand)
Department of Civil and Env Eng, The University of Auckland
Auckland, New Zealand
g.raftery(at)auckland.ac.nz
COST FP1402, IPC Member, MC Observer, WG4 Member

Personal	*Organisation*		
Years of experience in relevant field: 10 Expertise: Glued laminated timber, Adhesive bonding, Numerical modelling, Experimental testing, Composite systems Degree: PhD. (01.06.2010)	Civil and Environmental Engineering (www.cee.auckland.ac.nz) Focus: theoretical and practical research / innovation, design of structures, education/training Facilities : Structures testing lab, 1000 kN Tension and Compression capacity, fabrication		
	No. of staff	PhD students	MSc/year
	4	6	2

Research projects

1. development of the connection chapter for the New Zealand timber design standard (NZS 3603)

2. Development of design rules for small-dowel type fasteners with brittle behaviour (these results are to be incorporated in the next version of the NZS 3603 and the Canadian O86 "Design of Timber Structures" design standard)

3. development of design rules for timber moment connection that exhibit brittle failure

4. verification of design rules for self-tapping screws connections that exhibit brittle failure

Publications

- Raftery, G and Rodd, P. FRP reinforcement of low-grade glulam timber bonded with wood adhesive, Construction and Building Materials. 2015; Vol. 91, pp. 116-125.
- Raftery, G., and Kelly, F. Basalt FRP rods for reinforcement and repair of timber, Composites Part B: Engineering. 2015; Vol 70, pp. 9-19.
- Raftery, G. and Whelan, C. Low-grade glued laminated timber beams reinforced using improved arrangements of bonded-in GFRP rods. Construction and Building Materials, 2014; Vol 59, pp. 209-220.
- Raftery, G. and Harte, A. Material characterization of fast-grown plantation spruce, Proceedings of the ICE: Structures and Buildings. 2014; Vol. 167, Issue SB6, pp. 380–386.
- Raftery, G. and Harte, A. Nonlinear numerical modelling of FRP reinforced glued laminated timber, Composites Part B: Engineering, 2013; Vol. 52, pp. 40-50.
- Raftery, G. and Harte, A. Low-grade glued laminated timber reinforced with FRP plate, Composites Part B: Engineering, 2011; Vol. 42, Issue 4, pp. 724-735.
- Raftery, G., Harte, A. and Rodd, P., Bond quality at the FRP wood interface using wood laminating adhesives, International Journal of Adhesion and Adhesives, 2009; Vol. 29, Issue 2, pp.101-110.
- Raftery, G., Harte, A. and Rodd, P., Bonding of FRP materials to wood using thin epoxy gluelines, International Journal of Adhesion and Adhesives, 2009; Vol. 29, Issue 5, pp.580-588.

Prof. Vlatka Rajčić (Croatia)

University of Zagreb, Faculty of Civil Engineering
Zagreb, Croatia

vrajcic(at)grad.hr

COST FP1402, MC Member, WG4 Member

Personal	*Organisation*
Years of experience in relevant field: 22 Expertise: composite structures, robustness of timber structures, assesment and evaluation of material properties by NDTs Degree: PhD (10.07.2000)	Structural Department/Chair for Timber Structures (www.unizag.grad.hr) Focus: theoretical and practical research / innovation, design of structures, education / training and revision of timber design projects, timber structures Facilities: Multi-purpose universal testing machines Z600 and ACTUATOR 600/250, ZWICK for static and dynamic testing. Portable devices: ultrasound device, spectral analyser, resistograph, moisturemeters, etc.

No. of staff	PhD students	MSc/year
5	4	55

Research projects

- Experimental evaluation of composite timber-lightweight concrete (EPS) structures behavior“, Faculty of Civil Engineering University of Zagreb, financed by Ministry of Science and Technology RCroatia, coordinator Vlatka Rajčić, 1998.-2000.

- Composite structural systems timber-structural glass and timber-steel“ (Nr. 082-1491823-1463) Faculty of Civil Engineering University of Zagreb, financed by Ministry of Science and Technology RCroatia, coordinator prof.dr.sc. Vlatka Rajčić,(people involved: 2007-2012

- CLIMATE FOR CULTURE Damage risk assessment, macroeconomic impact and mitigation strategies for sustainable preservation of cultural heritage in the times of climate change FP7 project (2009-2014), coordinator Fraunhofer Germany (Johanna Leissner and Ralf Kilian), www.climateforculture.eu

- Bilateral project: - Seismic resistance of composite timber-structural glass structural systems with opimal lavel of enery dissipation” Faculty of Civil Engineering Zagreb, Croatia and Instute for seismic engineering, Skopje, Macedonia. Bilateral project Croatia-Macedonia, 2010- 2013, coordinators prof. Vlatka Rajčić and prof. Lidija Krstevska

- The behavior and the possibility of rehabilitation of wooden frames with structural glass infill in earthquakes , financed by Ministry of Science and Technology RCroatia (2014-2015)

Publications

1. Pavković, Krunoslav; Rajčić, Vlatka; Haiman, Miljenko.Large diameter fastener in locally reinforced and non-reinforced timber loaded perpendicular to grain. // Engineering structures. 74 (2014) ; 256-265 (scientific paper).

2. Steiger, René; Serrano, Erik LU; Stepinac, Mislav; Rajčić, Vlatka; O'Neill, Caoimhe; McPolin, Daniel; Widmann, Robert. Strengthening of timber structures with glued-in rods. // Construction and building materials. 1 (2015) , 1; 1-1 (scientific paper)

3. Stepinac, Mislav; Rajčić, Vlatka; Barbalić Jure. Influence of long term load on timber-concrete composite systems. //Gradevinar, Journal of the Croatian Association of Civil Engineers. 67 (2015) , 3/2015; 235-246 (scientific review)

4. Antolinca, David; Rajčić, Vlatka; Žarnić, Roko: Analysis of hysteretic response of glass infilled wooden frames. // Journal of Civil Engineering and Management. 20 (2014) , 4; 600-608

5. Kirkegaard, Poul Henning; Sørensen, John Dalsgaard; Čizmar, Dean; Rajčić, Vlatka: System reliability of timber structures with ductile behaviour. // Engineering structures. 33 (2011) , 11; 3093-3098

6. Krunoslav Pavković, Vlatka Rajčić, Dean Čizmar: PARAMETRIC ANALYSIS OF LARGE DIAMETER MECHANICAL FASTENER IN REINFORCED GLULAM, Technical Gazette Vol 21, 4(2014), 843-852

7. Rajčić, Vlatka; Bjelanović, Adriana; Rak, Mladenko: Bearing capacity of glued in steel rods in oak elements// Gradevinar, Journal of the Croatian Association of Civil Engineers. Vol 56 (2004), 3; 155-161

8. Krstevska, Lidija; Tashkov, Ljubče; Rajčić, Vlatka; Žarnić, Roko: Shaking Table Test of Innovative Composite Panel Composed of Glued Laminated Wood and Bearing Glass// Proceedings of the 15th World

Prof. Dr. Jaroslav Sandanus (Slovakia)
Slovak University of Technology in Bratislava
Bratislava, Slovakia
jaroslav.sandanus(at)stuba.sk
COST FP1402¸ MC Member, WG4 Member

Personal	*Organisation*
Years of experience in relevant field: 21 Expertise: Composite timber-concrete structures, diagnostics and refurbishment of historical timber structures Degree: Assoc.Prof (25.05.2011)	Slovak University of Technology in Bratislava (www.svf.stuba.sk) Focus: theoretical and practical research / innovation, design of structures and education and training Facilities: Mobile testing devices (force and displacement transducers, strain gauges, pressure devices, moisture meter)

No. of staff	PhD students	MSc/year
3	1	12

Research projects

1. Composite beams made of wood, concrete, and high-strength materials. Their real features, serviceability, reconstructions, joints, rheology and ecology (VEGA 1/1032/11)

2. Timber and combined beams - real operation, development, reconstructions (VEGA 1/3309/06)

Publications

1. Poštulka, J., Sandanus, J.: Berechnungsverfahren für eine Holz-Beton-Verbunddecke mit nägeln als verbindungsmittel.
In: Bautechnik, 1999, 76 (11), pp. 1026-1030, ISSN 0932-8351

2. Sandanus, J.: Parametric study of the factors affecting the resistance of a composite timber-concrete cross-section
In: Wood Research, 2007, 52 (3), pp. 109-114, ISSN 1336-4561

3. Blesák, L. – Sandanus, J. – Draškovič, F.: Modification of physical, mechanical and stiffness features of timber and its influence on the resistance of a connection timber-timber.
In: Wood Research, 2012, 57 (4), pp. 601-612, ISSN 1336-4561

Prof. Dr. Kay-Uwe Schober (Germany)
Mainz University of Applied Sciences
Mainz Germany
schober(at)is-mainz.com
COST FP1402, WG4 Member

Personal	*Organisation*
Years of experience in relevant field: 13 Expertise: Hybrid timber structures, adhesives Degree: Dr.-Ing. (11.11.2008)	iSmainz - Institute of Innovative Structures (www.is-mainz.com/schober) Focus: theoretical and practical research/innovation, design of structures Facilities: Amtliche Prüfstelle für Baustoffe, static testing equipement, climate chamber for artificial ageing of material samples, dynamic testing machines, high-end digital measurement technology, FEM- and CFM- software

No. of staff	PhD students	MSc/year
13	2	8

Research projects

High-performance timber composite joints for spatial round wood truss structures, 2012-2015, Schober/Becker

Concrete-based adhesives used in connections, ongoing, Schober/Kuechler

Pre-Tensioned Timber Truss Bridges, ongoing, Schober/Becker

Bio-polymer composites for large-span timber structures, planned for 2016, Schober/Becker/Küchler

Bio-polymer composites for road reconstructions, 2016-2019, Schober/Küchler

Publications

Kliger, R., Brunner, M., Harte, A., & Schober, K.U. (2015). „Wood-based beams strengthened with FRP laminates - improved performance with prestressed systems“, European Journal of Wood and Wood Products (under review)

Schober, K.U. (2015). „New ways in composite design - Introducing round wood for modern bridge and truss structures“, Proceedings of 2015 Forest Products Society International Convention, Atlanta, USA.

Schober, K.U. & Tannert, T. (2015). „Hybrid connections for timber structures“, European Journal of Wood and Wood Products (under review)

Drass, M., Schober, K.U. & Kuechler, M. (2014a). „Advancement of glued-in rods using polymer concrete as composite material“, Proceedings of the 13th World Conference on Timber Engineering (WCTE 2014), Quebec, QC, Canada.

Drass, M., Schober, K.U. & Kuechler, M. (2014b). „Glued-in rods in timber joints: characterization of failure modes dependent on the test set-up“, Experimental Research with Timber, Schober, K.U. (ed.), Bath, United Kingdom, 17-21. ISBN 1-85790-183-5.

Schober, K.U., Becker, W., Drass, M. & Weber, J. (2014). „High-performance timber composite joints for spatial round wood truss structures “, Proceedings of the 13th World Conference on Timber Engineering (WCTE 2014), Quebec, QC, Canada.

Schober, K.U. (2014). „New jointing techniques for large-scale timber structures“, Keynote lecture, Proceedings of the 2nd Annual International Conference on Architecture and Civil Engineering (ACE 2014), xv-xviii, Singapore. ISSN 2301-394X.

Dr. Kristian Sogel (Slovakia)
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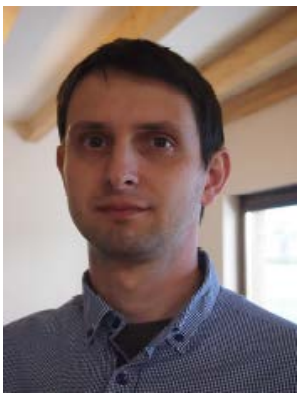
COST FP1402, MC Member, WG4 Member



Personal	*Organisation*		
Years of experience in relevant field: 11 Expertise: Long-term operation of timber structures, Diagnostics and refurbishment of historical timber structures Degree: PhD (19.06.2009)	Department of Steel and Timber Structures (www.svf.stuba.sk) Focus: theoretical and practical research / innovation, design of structures and education and training Facilities: Mobile testing devices (force and displacement transducers, strain gauges, pressure devices, moisture meter)		
	No. of staff	PhD students	MSc/year
	3	1	12

Research projects

1. Composite beams made of wood, concrete, and high-strength materials. Their real features, serviceability, reconstructions, joints, rheology and ecology (VEGA 1/1032/11)

2. Timber and combined beams - real operation, development, reconstructions (VEGA 1/3309/06)

Publications

1. Sogel, K.: Timber Beams Subjected to Long-term Loading. In: Slovak Journal of Civil Engineering. Vol. 18, No. 3, 2010, pp. 21-26, ISSN 1210-3896

2. Sandanus, J. – Sogel, K.: Load-bearing structure modelling of historic buildings. In. Transaction of the VŠB – Technical University of Ostrava. Civil Engineering Series. Vol. 13, No. 2, 2003, ISSN 1804-4824 (podiel 50%)

3. Sandanus, J. – Sogel, K.: Refurbishment of Significant Timber Structures in Slovakia. In: Journal of Civil Engineering and Architecture. Vol. 8, No. 8, 2014, pp. 1009-1016. David Publishing Company, New York, USA, ISSN 1934-7359 (podiel 50%)

4. Sandanus, J. – Slivanský, M. – Sógel, K.: Long-Term Test on Timber Trusses. In: Proceedings of IASS - SLTE 2014: 6th Latin-American Symposium on Tension Structures. Shells, Membranes and Spatial Structures. 15.-19.9.2014, Brasilia. Footprints, Brasilia, unpag. (podiel 33%)

Prof. Dr. Thomas Tannert (Canada)
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COST FP1402, IPC Member, MC Observer, WG4 Member

Personal	*Organisation*		
Years of experience in relevant field: 14 Expertise: Timber connections, hybrid structures Degree: PhD. (30.04.2008)	Wood Science and Civil Engineering (http://team.forestry.ubc.ca/ and http://tannert.forestry.ubc.ca) Focus: theoretical and practical research /innovation, education /training Facilities: Two fully equipped structural testing labs		
	No. of staff	PhD students	MSc/year
	20	8	10

Research projects

http://tannert.forestry.ubc.ca/research/
http://team.forestry.ubc.ca/research/

Publications

http://tannert.forestry.ubc.ca/research/
http://team.forestry.ubc.ca/research/