Mehrab Madhoushi, PhD.
Marie Curie ADAGIO Fellow
University of the Basque Country

ORCID: http://www.orcid.org/0000-0001-6845-2749
Google scholar: https://scholar.google.com/citations?user=WUfwt-wAAAAJ&hl=en

Selected Publications

- Binderless self-densified 3 mm-thick board fully made from (ligno) cellulose nanofibers of paulownia sawdust. Waste and Biomass Valorization, 2023, 1-13.
- Manufacturing and evaluation of mechanical and physical properties of green geopolymer composite reinforced with kenaf fibers and carbon nanotubes. J. Science and Tech. Composites, 2023, 9 (3): 2011-2022.
- Bending and shear properties of cross-laminated timber panels made of poplar (*Populus alba*). Construction and Building Materials. 2022. 265, 120326.
- Mechanical properties of foamed sugarcane bagasse/polypropylene composite enhanced by spherical-shaped carbon nanoparticles. Industrial Crops and Products, 2021, 172, 114041.
- Direct and facile process of cellulose nanofibers from Paulownia wood through bleaching and TEMPO oxidation simultaneously. Carbohydrate Polymers, 2021, 262, 117938.
- Effect of type and thickness of core on mechanical properties and thermal conductivity transfer of SIP made of poplar OSB. Forest and Wood Products, 2021, 73 (4), 467-478.
- Study of the effect of carbon nanofiber reinforced epoxy adhesive on the flexural moment capacity of corner joints in furniture. Iranian Journal of Wood and Paper Science Research, 2021, 36 (4): 305-316.
- Evaluation of degradation in chemical compounds of wood in historical buildings using FT-IR and FT-Raman vibrational spectroscopy. Maderas. Ciencia y tecnología, 2019, 21 (3), 381-392.
- Effect of glue-line thickness on pull-out behavior of glued-in GFRP rods in LVL: Finite element analysis. 2017, Polymer Testing 62, 196-202.
- Study of physical and mechanical properties of cellulosic and lignocellulosic nanofibers reinforced epoxy resin. J. of Wood and Forest Science and Technology. 2016, 23(2): 273-295.
- Effects of nanoclay and coupling agent on fungal degradation and water absorption of sanding dust/high density polyethylene composites. Journal of Composite Materials, 2015, 49(9): 1107-1114.
- Mechanical and physical properties of aluminum powder/MDF dust/polypropylene composites. Construction and Building Materials, 2013, 44: 214-220.
- Withdrawal strength of fasteners in rice straw fibre- thermoplastic composites under dry and wet conditions. Polymer testing, 2009, 28(3): 301-306.

Books

- Green Building Biomaterials
- Formaldehyde in Wood Products: Emission and Measurement

Thesis Supervision of graduate students

PhD Students: 10, Master Students: 35

Teaching activities

Mechanics of Materials, Mechanics of Wood, Natural Fibre Composites, Mechanics of Wood Composites, Industrial Quality Control, Structural Analysis, Design of Wood Structures, Research Methods, Non-destructive Testing, Engineered Wood Products, Application of Wood Composites, Green Building Biomaterials.

Scholarship, Fellowship and award

- Visiting Fellowship, Department of Wood Science, University of British Columbia CANADA

- PhD Full Scholarship (Iranian Government) for study in Faculty of Engineering, University of Bath, United Kingdom
- MSc Full Scholarship, Iranian Government, University of Tarbiat Modares, Iran

Awards

- 2017 and 2018, The best ISO Mirror Committee, TC 165, TC 218. The Inst. of Standards and Industrial Research, IRAN
- 2008 and 2010, Top Researcher among the faculty members for publication of the highest quality paper in ISI Journals, IRAN

Major collaborations, including research grants

- Preparation and characterization of green geopolymer made of natural fibre and carbon nanotube (Iran Science Foundation)
- Guideline study of wood heritage buildings in Gorgan and Gomishan (North of Iran) (Industrial Project Grant)
- Enhancing the low-density wood by densification (in collaboration with Uni. of Putra Malaysia).
- Enhancing of epoxy resin by using nanocellulose,
- Enhancing the adhesive for composites for more lifetime and variable climate by using of sustainable nanomaterials,
- Structural health assessment of composites and structures using non-destructive testing,
- Utilization of industrial fibre wastes for producing of biobased composites,
- Natural fibres-plastic composites based on recycled beverage carton (tetra pack),
- Chemical and thermal treatment of natural fibre-plastic composites,
- More saving of energy in buildings through preparation of sustainable structural insulation panel,
- Application of fast-growing hardwood trees for manufacturing of sustainable and new engineered wood products,
- Structural health assessment and damage detection of the some of the heritage and historical wood buildings in Gorgan (North of Iran) using nondestructive methods,
- Repair and rehabilitation of damaged structural members using sustainable nanomaterials.

Patents

- Direct production nanocellulose from wood, Patent No: 105425- 21/11/99
- Manufacturing of hybrid composites by using MDF dust/PP/Aluminium powder, Patent No. 71673-5/7/90
- Manufacturing of carton board from recycled beverage carton (tetra pack), Patent No. 74354-23/12/1391
- Fanoos Software, Version I, A computer software for optimization the industrial process of wooden furniture. Patent No. 202950

ISI Journal Reviewer

- Wood and Fiber Science, Construction and Building Materials, Composite A, Composite B, Bioresources, Iranian Journal of Science and Technology. Polymer Testing, Journal of Composite Materials