

## Assoc. Prof. Bekir Yılmaz Pekmezci

### Personal Information

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### Biography

I have graduated from ITU Faculty of Civil Engineering following my high school education at Trabzon Yomra Science High School. I have completed my MSc and Ph.D. education at ITU Graduate School of Science and Technology. I have been working as Assistant Professor at the Civil Engineering Faculty of ITU.

### Education Information

Doctorate, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İnşaat Mühendisliği Anabilim Dalı, Turkey 2000 - 2006

Postgraduate, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İnşaat Mühendisliği Anabilim Dalı, Turkey 1998 - 2000

Undergraduate, İstanbul Teknik Üniversitesi, İnşaat Fakültesi, İnşaat Mühendisliği Bölümü, Turkey 1994 - 1998

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Yüksek performanslı çimentolu ürünlerin otojen rötre özellikleri, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İnşaat Mühendisliği Anabilim Dalı, 2005

Postgraduate, Uzuntarla trasının betonun mekanik özellikleri üzerindeki etkinliği, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İnşaat Mühendisliği Anabilim Dalı, 2000

### Research Areas

Civil Engineering, Building materials, Materials in Civil Engineering, Concrete Technology, Building Components and Materials, Composite materials, Material Mechanics, Applications of Insulation Materials, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Istanbul Technical University, İnşaat, İnşaat Mühendisliği, 2015 - Continues

Assistant Professor, Istanbul Technical University, İnşaat, İnşaat Mühendisliği, 2007 - 2015

Research Assistant PhD, Istanbul Technical University, İnşaat, İnşaat Mühendisliği, 2006 - 2007

Research Assistant, Istanbul Technical University, İnşaat, İnşaat Mühendisliği, 1998 - 2006

## Courses

Malzemelerin Şekil Değişirme Özellikleri, Postgraduate, 2019 - 2020

Materials Science, Undergraduate, 2019 - 2020

Yapı Malzemesi, Undergraduate, 2016 - 2017

Malzeme Bilimi, Undergraduate, 2016 - 2017

Yapıların Deneysel Analizi, Postgraduate, 2016 - 2017

## Advising Theses

Pekmezci B. Y. , THERMAL AND MECHANICAL PERFORMANCE OF CEMENTITIOUS PCM COMPOSITES, Doctorate, E.YİĞİT(Student), 2020

Pekmezci B. Y. , Influence of frequency at ultrasonic tomography of concrete, Postgraduate, M.ALTUĞ(Student), 2019

Pekmezci B. Y. , Ultrasonik tomografi ve ultrases geçiş hızı yöntemiyle betonda kusur tespiti, Postgraduate, E.TAVLI(Student), 2018

Pekmezci B. Y. , Determination of defects in timber structural materials with ultrasonic tomography, Postgraduate, M.CAN(Student), 2017

Pekmezci B. Y. , Mechanical performance of glass textile reinforced cementitious composites, Postgraduate, H.AGHAFAM(Student), 2016

Pekmezci B. Y. , I. Ulusal Mimarlık dönemine ait yapıların deneysel ve sayısal olarak incelenmesi, Postgraduate, S.EKİNCİ(Student), 2015

Pekmezci B. Y. , Kompozit panel yapı malzemelerinin mekanik özelliklerinin araştırılması, Postgraduate, E.ARABACI(Student), 2015

Pekmezci B. Y. , Influence of polyolefin fibers on mechanical properties of concrete, Postgraduate, B.YORULMAZ(Student), 2014

Pekmezci B. Y. , PVA tekstillerin çimento esaslı kompozitlerde kullanılması, Postgraduate, A.CAN(Student), 2012

Pekmezci B. Y. , Çok hafif yalıtım betonlarının mekanik ve ısı iletkenlik özellikleri, Postgraduate, S.ELDEN(Student), 2011

Pekmezci B. Y. , Kireç ve alçı içeren toprak elemanlarının fiziksel ve mekanik özellikleri, Postgraduate, E.AGHAZADEH(Student), 2011

Pekmezci B. Y. , Comparison of flexural performances of fabric reinforced cementitious composites with varying fabric types. , Postgraduate, R.ÇELİK(Student), 2011

Pekmezci B. Y. , Türkiye yapı malzemesi sektöründe yer alan firmaların ihracatta yaşadıkları sorunlar ve çözüm önerileri, Postgraduate, İ.İŞİK(Student), 2011

Pekmezci B. Y. , Ekstrüzyon tekniğinin çimento esaslı malzemelerde uygulanması, Postgraduate, A.SANCAK(Student), 2010

Pekmezci B. Y. , Kolloid silikanın uçucu küllü harçların mekanik özelliklerine etkisi, Postgraduate, D.GÜNDOĞDU(Student), 2010

Pekmezci B. Y. , Durability of extruded cement based materials, Postgraduate, M.ÖZEN(Student), 2010

## Jury Memberships

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Yıldız Teknik Üniversitesi, January, 2020

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Yıldız Teknik Üniversitesi, January, 2018

## Research Infrastructure Information

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Mechanical and physical properties and morphology of concrete containing plastic waste as aggregate**  
Belmokaddem M., Mahi A., Senhadji Y., Pekmezci B. Y.  
Construction And Building Materials, vol.257, pp.1-10, 2020 (Journal Indexed in SCI)
- II. **A Taguchi approach for optimizing the mixture design of cold-bonded PCM aggregates**  
Tuncel E. Y. , Pekmezci B. Y.  
ENERGY SOURCES PART A-RECOVERY UTILIZATION AND ENVIRONMENTAL EFFECTS, 2019 (Journal Indexed in SCI)
- III. **Performance of glass fiber-reinforced cement composites containing phase change materials**  
Tuncel E. Y. , Pekmezci B. Y.  
ENVIRONMENTAL PROGRESS & SUSTAINABLE ENERGY, vol.38, no.3, 2019 (Journal Indexed in SCI)
- IV. **A sustainable cold bonded lightweight PCM aggregate production: Its effects on concrete properties**  
Tuncel E. Y. , Pekmezci B. Y.  
CONSTRUCTION AND BUILDING MATERIALS, vol.181, pp.199-216, 2018 (Journal Indexed in SCI)
- V. **Fiber quantity analysis of cementitious composite using multifocus imagery**  
AKÇAY Ö., Pekmezci B. Y. , Şeker D. Z. , Tuncel E. Y. , Atahan H. N.  
POLYMER COMPOSITES, vol.39, no.6, pp.2126-2134, 2018 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **Freeze-Thaw Durability of Lime Based FRCM Systems for Strengthening Historical Masonry**  
PEKMEZCİ B. Y. , Arabaci E., ÜSTÜNDAĞ C.  
Key Engineering Materials, vol.817, pp.174-181, 2019 (Refereed Journals of Other Institutions)

## Refereed Congress / Symposium Publications in Proceedings

- I. **PCM containing sustainable fiber reinforced cementitious panels: Mechanical and thermal performance**  
PEKMEZCİ B. Y. , TUNCEL E. Y.  
Indian Chapter of American Concrete Institute, Mumbai, India, 14 - 15 December 2018
- II. **Flexural behaviour of fabric reinforced cement-based composites in strengthening of masonry walls**  
GÜNEŞ M. E. , GİRGİN Z. C. , PEKMEZCİ B. Y.  
International Workshop on Advanced Materials and Innovative Systems in Structural Engineering : Seismic Practices, IWAMISSE 2018, İstanbul, Turkey, 16 November 2018
- III. **Natural Hydraulic Lime Based Composites for Strengthening of Historical Constructions**  
PEKMEZCİ B. Y.  
Advances in Construction Materials and Systems, Chennai, India, 3 - 08 September 2017, pp.597-607
- IV. **Application of a partially destructive mini shear index test on historical masonry buildings**  
Pekmezci B. Y. , Güler F.  
SAHC 2016- Structural Analysis of Historical Constructions, Leuven, Belgium, 13 - 15 September 2016, pp.1-10
- V. **Conservation of timber structures in Istanbul: Problems and proposals**  
Polat-Pekmezci I., Eyüpgiller K. K. , Üstündağ C., Pekmezci B. Y.  
10th International Conference on Structural Analysis of Historical Constructions, SAHC 2016, Leuven, Belgium, 13 - 15 September 2016, pp.1045-1049

- VI. **Effects of phase change materials on the mechanical and thermal performance of the fiber reinforced composites**  
Pekmezci B. Y. , Tuncel E. Y.  
NICOM5: Nanotechnology in Construction Materials, Chicago, United States Of America, 14 May 2015 - 16 May 2016, pp.1-7
- VII. **Utilization of partially destructive test methods on mechanical properties of historical lime mortars**  
Tuncel E. Y. , Pekmezci I., Pekmezci B. Y.  
10th International Conference on Structural Analysis of Historical Constructions, SAHC 2016, Leuven, Belgium, 13 - 15 September 2016, pp.1415-1418
- VIII. **BEHAVIOR OF TEXTILE REINFORCED LIME COMPOSITES UNDER FLEXURAL LOADS**  
Tuncel E. Y. , Polat Pekmezci I., Pekmezci B. Y.  
9th International Conference on Structural Analysis of Historical Constructions, Mexico City, Mexico, 14 October 2014 - 17 October 2015, pp.1-8
- IX. **Effect of Type and Performance of Plasticizer on the Mechanical Properties of Concretes: SCC vs Conventional Concrete**  
Tuncel E. Y. , Atahan H. N. , Pekmezci B. Y.  
ACE 2014 11 th International Congress on Advances in Civil Engineering, İstanbul, Turkey, 14 - 17 September 2015, pp.1-6
- X. **Properties of Lime Based Textile Reinforced Composites**  
Tuncel E. Y. , Polat Pekmezci I., Pekmezci B. Y. , Karagüzel Kayaoğlu B.  
5th International Istanbul Textile Congress, 2015, Innovative Technologies, Inspire to Innovate, İstanbul, Turkey, 11 - 12 September 2015, pp.236-241
- XI. **Effects of Microencapsulated Phase Change Materials on the Mechanical and Thermal Performance of the Fiber Reinforced Inorganic Panels**  
TUNCEL E. Y. , PEKMEZCİ B. Y.  
NICOM 5 Conference on Nanotechnology in Construction, Chicago, 24 - 26 May 2015
- XII. **Utility of nano-SiO<sub>2</sub> in fiber reinforced cementitious composites", 2015, s. 1-7, NICOM5: Nanotechnology in Construction Materials**  
Pekmezci B. Y.  
NICOM5: Nanotechnology in Construction Materials, Chicago, United States Of America, 14 - 16 May 2015, pp.1-7
- XIII. **Calender extrusion of cement mixtures for sustainable composite production**  
Pekmezci B. Y.  
Fiber Reinforced Concrete for Sustainable Structures at the Fall 2012 ACI Convention and the Fall 2013 ACI Convention, Arizona, United States Of America, 10 - 24 October 2013, pp.57-67
- XIV. **İstanbul'da Mimar Kemalettin Bey'in Bazı Eserleri Üzerinde Genel Bir Malzeme ve Yapısal Performans Değerlendirmesi**  
Ekinci S., Turan Ö. T. , Pekmezci B. Y. , Polat Pekmezci I., Yorulmaz B., Dusak S.  
Tarihi Eserlerin Güçlendirilmesi ve Geleceğe Güvenle Aktarılması, İstanbul, Turkey, 27 - 29 November 2013, pp.152-161
- XV. **PVA ve PP Lif İçeren Kireç Harçlarının Mekanik Özellikleri**  
Tuncel E. Y. , Polat Pekmezci I., Pekmezci B. Y.  
4. Tarihi Yapıların Güçlendirilmesi ve Geleceğe Güvenle Devredilmesi Sempozyumu, İstanbul, Turkey, 27 - 29 November 2013, pp.185-193

## **Supported Projects**

Pekmezci B. Y. , Karagüzel Kayaoğlu B., Project Supported by Higher Education Institutions, Betonda Donatı Olarak Polimer Esaslı Nonwoven Tekstillerin Kullanılması, 2011 - 2020

Pekmezci B. Y. , Project Supported by Higher Education Institutions, Application of a partially destructive mini shear index test on historical masonry buildings, 2016 - 2018

Pekmezci B. Y., Project Supported by Higher Education Institutions, Kolloidal Nano Silikanın Fiber Donatılı Çimentolu Kompozitlerin Üretiminde Kullanılması, 2015 - 2018

Pekmezci B. Y., Project Supported by Higher Education Institutions, Nano SiO<sub>2</sub> nin Portland Ve Uçucu Küllü Çimentoların Hidratasyon Kinetiğine Etkileri, 2013 - 2018

Pekmezci B. Y., Project Supported by Higher Education Institutions, Mineral Katkı İçeren Harçlarda Nano SiO<sub>2</sub> Kullanımı, 2012 - 2018

Pekmezci B. Y., Project Supported by Higher Education Institutions, Nano SiO<sub>2</sub> Kullanımının Uçucu Küllü Harçların Mekanik Özellikleri Üzerindeki etkisi, 2010 - 2018

Pekmezci B. Y., Project Supported by Higher Education Institutions, Farklı üretim teknikleriyle üretilen ince cidarlı kompozitlerin mekanik özelliklerinin araştırılması, 2015 - 2016

Pekmezci B. Y., Project Supported by Higher Education Institutions, Düşük Mukavemetli Yalıtım Amaçlı Hafif Betonların Mekanik ve Isıl İletkenlik Özelliklerinin İncelenmesi, 2009 - 2015

Pekmezci B. Y., Project Supported by Higher Education Institutions, Reaktif Pudra Betonunun Kırılma Parametreleri ve Otojen Rötresinin Belirlenmesi, 2009 - 2015

Pekmezci B. Y., Project Supported by Higher Education Institutions, Kerpiç Blokların Mekanik performansının Kireç ve Alçı Kullanılarak İyileştirilmesi, 2011 - 2013

Pekmezci B. Y., Project Supported by Higher Education Institutions, Cam Tekstillerle Üretilen Betonların Mekanik Özellikleri, 2010 - 2013

Pekmezci B. Y., Project Supported by Higher Education Institutions, Ekstrüzyon Tekniği ile Üretilen Çimento Esaslı Malzemelerin Optimum Tasarımı, 2009 - 2010

Pekmezci B. Y., Project Supported by Higher Education Institutions, Uçucu Kül İçeren Harçların Mekanik Özelliklerinin Nanosilika Kullanımı İle İyileştirilmesi, 2009 - 2010

Pekmezci B. Y., Project Supported by Higher Education Institutions, Çimento Esaslı Malzemelerin Ekstrüzyon Tekniği ile Üretilmesi, 2009 - 2010

## Patent

Pekmezci B. Y., System and method for producing thin cement-based panels having high strength, durability and production rate, Patent, CHAPTER C Chemistry; Metallurgy, Initial Registration, 2017

## Memberships / Tasks in Scientific Organizations

Mechanical Characterization and Structural design of Textile Reinforced Concrete, Member, 2019 - Continues

FRCM/SRG Material Characteristics, Member, 2019 - Continues

İnce Fiber Donatılı Kompozitler ve Ferrocement, Member, 2015 - Continues

Nano Engineered Concrete, Member, 2015 - Continues

Betonun Nanoteknolojisi teknik kurulu, Member, 2015 - Continues

## Scientific Refereeing

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, July 2020

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, May 2020

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, May 2020

JOURNAL OF BUILDING ENGINEERING, SCI Journal, March 2020

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, March 2020

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, March 2020

İSTANBUL TİCARET ÜNİVERSİTESİ FEN BİLİMLERİ DERGİSİ, National Scientific Refreed Journal, March 2020

JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, Journal Indexed in SCI-E,

March 2020

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, February 2020

JOURNAL OF COMPOSITE MATERIALS, SCI Journal, February 2020

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, January 2020

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, November 2019

JOURNAL OF BUILDING ENGINEERING, SCI Journal, November 2019

JOURNAL OF BUILDING ENGINEERING, SCI Journal, October 2019

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, October 2019

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, September 2019

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, August 2019

JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, Journal Indexed in SCI-E, July 2019

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, July 2019

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, April 2019

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, January 2019

JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, Journal Indexed in SCI-E, November 2018

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, October 2018

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, June 2018

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, April 2018

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, April 2014

JOURNAL OF MATERIALS IN CIVIL ENGINEERING-ASCE, SCI Journal, October 2011

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, October 2011

CONSTRUCTION AND BUILDING MATERIALS, SCI Journal, June 2011

## **Mobility Activity**

Research Scholarship Program, Guest Researcher, Northwestern University, United States Of America, 2004 - 2005

## **Edit Congress and Symposium Activities**

3 rd Raikar Memorial International Conference and Gettu Kodur Symposium, Invited Speaker, Mumbai, India, 2018

Advances in Construction Materials and Systems, Attendee, Chennai, India, 2017

2nd R.N. Raikar International Conference and Banthia- Basheer International Symposium on Advances in Science and Technology of Concrete, Invited Speaker, Mumbai, India, 2015

CEMENT. CONCRETE. DRY MIXTURES , Invited Speaker, Moscow, Russia, 2011

## **Citations**

Total Citations (WOS):116

h-index (WOS):5

## **Scholarships**

Scholar supporting fund, University, 2004 - 2004

Scholar support found, TUBITAK, 2004 - 2004

## **Entrepreneurship Activities**

Limited, Ticem Advanced Structural Technologies, 10 November 2010, Founder Owner

## **Non Academic Experience**

Business Establishment Private, Ticem İleri Yapı Teknolojileri San. Tic. Dan. Ltd. Şti.