

Date: September 30th, 2019

Curriculum vitae

Personal Data

Name: Gonzalo Barluenga
Date of birth: 07/23/1973

Current Position

Position: Professor of Building Materials and Construction (permanent position since February 2008)
Institution: University of Alcalá
Center: School of Architecture
Department.: Architecture
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Areas of interest

- Advanced building materials
- Physical-mechanical characterization of building materials
- Sustainable materials and building Technologies
- Precast architectural elements design and behaviour

Education

- Ph.D., Architecture, Polytechnic University of Madrid, 2002
- M.S.C.E., Architecture, Polytechnic University of Madrid, 1998 (6 years degree + Final Project)

Previous positions

Position	Institution	Date
PhD Student (granted)	Polytechnic University of Madrid	1999 – 2002
Assistant Professor	Polytechnic University of Madrid	2002 – 2004
Associate Professor	University of Alcalá	2004 – 2008

Courses taught

- Building Materials (Architecture and Architectural Engineering degrees)
- Construction (Architecture)
- Building Services and Installations (Architecture)
- Advanced Building Materials (MSc Architecture)

Public funded Projects (competitive calls)

- Sustainability and innovation criteria in Spanish Building Regulations for Building Quality Improvement (funded by Spanish Ministry of Housing, 2006, Project Leader)
- Project FENIX, Strategic research on safer and more sustainable roads (Spanish Ministry of Industry, 2007-2011, Researcher)
- (CCG08-UAH/MAT-4038) Influence of type and amount of fines on early age performance of Self Consolidating Concretes for Architectural Heritage (Community of Madrid, 2009-2010, Project Leader)
- (S2009/Mat-1629) Geomaterials. Durability and Conservation of Heritage Materials (Coordinated researching program funded by Community of Madrid, 2010-2013; Group Leader) www.geomateriales.es
- (BIA2013-48480-C2-2) Pumpability Evaluation of Self Compacting Concretes using Performance Indicators (Ministry of Economy and Competitiveness, 2014-2017, Coordinated Project Leader)
- (PPII14-22-P) Early age performance and durability of SCC for Building and Architectural Heritage Rehabilitation (Region of Castilla-La Mancha, 2014-2017, Project Leader)
- (BIA2016-77901-R) Nanoengineered Self-compacting mixes for improved cast in-place and early age performance. Multiscale characterization and experimental methodology. (Ministry of Economy and Competitiveness, 2017-2019, Project Leader)

Private Funded Projects and Contracts

- PP and rubber fiber reinforced concrete for roads (Pavimentos Asfálticos de Salamanca S.A, 1998-1999, Researcher)
- Precast architectural concrete panels (Edimaro, S. L., 1998-1999, Researcher)
- Short AR-glass fibers reinforcement for precast concrete elements (Vetrotex Saint Gobain España, S. A, 1998-1999, Researcher)
- Self levelling, vibration damping and one-coat mortars (Tecnología de Construcción las Torres, S. L., 1999, Researcher)
- Dynamic behaviour of rubber filled concrete for Road Design (Pavimentos Asfálticos de Salamanca S.A., 1999-2000, Researcher)
- Mortars for passive fire protection (Tecnología de Construcción las Torres, S. L., 2001, Researcher)
- Ecological sprayed mortars (Tecnología de Construcción las Torres, S. L., 2001, Researcher)
- High Strength concretes (Tecnología de Construcción las Torres, S. L., 2001, Researcher)
- Glass Reinforced Concrete (GRC) panels for low cost housing and other applications, for emergency and catastrophic situations (Vetrotex Saint Gobain España, S. A, 2002-2003, Researcher)
- Assessment of Deinking sludge of press paper for recycling in construction applications (Holmen Harper – Papelera Peninsular, S. A., 2002-2003, Researcher)
- Efficiency of Cem-FIL glass fibers on Concrete Cracking control (Vetrotex Saint Gobain España, S. A, 2003, Researcher)
- Design and characterization of Industrial concrete pavements using Cem-FIL glass fibers (Vetrotex Saint Gobain España, S. A, 2003, Researcher)
- Asphalt mixes and advanced concrete with end-of-use –tyres rubber (Pavimentos Asfálticos de Salamanca S.A, 2003-2005, Researcher)
- Investigation on new conglomerated products reinforced with short glass fibers for pavements and floor slabs (Vetrotex Saint Gobain España, S. A, 2004-2005, Researcher)
- Building applications of Asphalt mixes and advanced concrete with end-of-use –tyres rubber (Pavimentos Asfálticos de Salamanca S.A, 2007, Researcher)
- Constructive analysis and Materials Characterization of floor slabs in a XV century noble house (Casa de la Rua, Oviedo, Spain) (INDECO Obras e Infraestructuras, 2009, Project Leader)

- Research on "Experimental analysis of uplift and wall pressure in big elements" determination of uplift and wall pressure during the infilling of 4 big elements under pumping controlled speeds (OBRASCON HUARTE LAIN S.A., 2015, Researcher)

Publications

Indexed Articles (SCI, SCOPUS, AVERY)

- F. Hernández Olivares, G. Barluenga, M. R. Bollati, B. Witoszek, Static and dynamic behaviour of recycled tyre rubber-filled concrete, *Cement and Concrete Research*, 32 (2002), 1587-1596 (SCI)
- G. Barluenga, F. Hernández Olivares, R. T León, Seismic response of a new design of vertical joint for architectural panels, *Engineering Structures*, 25 (2003), 1655-1664 (SCI)
- F. Hernández Olivares, G. Barluenga, Fire performance of recycled rubber-filled high strength concrete, *Cement and Concrete Research*, 34 (2004), 109-117 (SCI)
- G. Barluenga, F. Hernández-Olivares, SBR Latex Modified Mortar rheology and mechanical behaviour, *Cement and Concrete Research*, 34 (2004), 527-535 (SCI)
- F. Hernández-Olivares, G. Barluenga, B. Parga-Landa, M. Bollati, B. Witoszek, Fatigue behaviour of recycled tyre rubber-filled concrete and its implications in the design of rigid pavements, *Construction and Building Materials*, 21 (2007), 1918-1927 (SCI)
- G. Barluenga, F. Hernández-Olivares, Cracking control of concretes modified with short AR-glass fibers at early age. Experimental results on standard concrete and SCC, *Cement and Concrete Research*, 37 (2007), 1624-1638 (SCI)
- G. Barluenga, Fiber–matrix interaction at early ages of concrete with short fibers, *Cement and Concrete Research*, 40 (2010), 802-809 (SCI)
- G. Barluenga, F. Hernández-Olivares, B. Parga-Landa, M. J. Cowling, A new bonded vertical joint design for architectural panels, *Construction and Building Materials*, 24 (2010), 918-926 (SCI)
- G. Barluenga, F. Hernández-Olivares, Self-levelling cement mortar containing grounded slate from quarrying waste, *Construction and Building Materials*, 24 (2010), 1601-1607 (SCI)
- G. Melián, G. Barluenga, F. Hernández-Olivares, Toughness increase of SCC reinforced with PP short fibers, *Materiales de Construcción*, 60 (300) (2010) 83-97 (SCI)
- G. Barluenga, J. Puentes, I. Palomar, Early age and hardened performance of cement pastes combining mineral additions, *Materials and Structures*, 46 (6) (2013) 921-941 (SCI)
- Barluenga, G., Undurraga, R., Estirado, F., Conde, J.F., Agua, F., Villegas, M.A., García-Heras, M. Bricks and mortars from the "Patio de Santo Tomás", Alcalá University (Madrid, Spain): a combined study of fabric characterization and building morphology in *Science and Technology for the Conservation of Cultural Heritage*. Ed M A Rogerio-Candelera, M Lazzarri, E. Cano, CRC press, Taylor and Francis Group; ISBN: 978-1-138-00009-4 (2013) pp 193-196 (SCI)
- G. Barluenga; R. Undurraga, L. Ramón-Laca, F. Estirado. Methodology for the study of the walls of the Patio de Santo Tomás, Colegio Mayor de San Ildefonso (Alcalá de Henares) in *Science and Technology for the Conservation of Cultural Heritage*. Ed M A Rogerio-Candelera, M Lazzarri, E. Cano, CRC press, Taylor and Francis Group; ISBN: 978-1-138-00009-4 (2013) pp 213-216. (SCI)
- BARLUENGA, G; UNDURRAGA, R J; ESTIRADO, F; DEL AGUA , F; VILLEGAS , M A; GARCÍA HERAS, M; CONDE , J F. Brick masonry identification in a complex historic building, the Main College of the University of Alcalá, Madrid (Spain). *Construction and Building Materials*. 2014, vol 54, p. 39-46 (SCI)
- N. Flores, G. Barluenga, F. Hernandez Olivares, Enhancement of durability of concrete composites containing natural pozzolans blended cement through the use of Polypropylene fibers. *Composites: Part B*. 61 (2014) 214–221. (SCI)
- Undurraga, R., Conde, J.F., Agua, F., Barluenga, G., Villegas, M.A., García-Heras, M. Historical and experimental integrated study on brick masonry identification: comparison of two heritage buildings in the city of Alcalá de Henares (Madrid, Spain) in *Science, Technology and Cultural Heritage*. Ed M A Rogerio-Candelera, CRC press, Taylor and Francis Group. Londres (Reino Unido); ISBN: 978-1-138-02744-2 (2014) pp. 95-101 (SCOPUS)

- J. PUENTES, G. BARLUENGA, I. PALOMAR. Effects of nano-components on early age cracking of self-compacting concretes. *Construction and Building Materials* 2014, vol 73, p 89-96 (SCI)
- I. PALOMAR, J. PUENTES, G. BARLUENGA. Lime-cement mortars for coating with improved thermal and acoustic performance. *Construction and Building Materials* 2015, vol 75, p 306-314 (SCI)
- G. BARLUENGA, J. PUENTES, I. PALOMAR. Early age monitoring of self-compacting concrete with mineral additions. *Construction and Building Materials* 2015, vol 77, p 66-73 (SCI)
- J. Puentes, G. Barluenga, I. Palomar. Effect of silica-based nano and micro additions on SCC at early age and on hardened porosity and permeability. *Construction and Building Materials* 2015, vol 81, p154-161 (SCI)
- A. M. Marín, G. Barluenga. Eladio Dieste y la cerámica armada: la forma de lo resistente. *Arquitecturas del Sur* 2015. Vol. 32 (45), p 90-103 (AVERY)
- G. BARLUENGA, J. PUENTES, I. PALOMAR. Hardened properties and microstructure of SCC with mineral additions. *Construction and Building Materials* 2015, vol 94, p 728-36 (SCI)
- N. Flores, G. Barluenga, F. Hernandez-Olivares. Combined effect of Polypropylene fibers and Silica Fume to improve the durability of concrete with natural Pozzolans blended cement. *Construction and Building Materials* 2015, vol 96, p 556-66 (SCI)
- G. Barluenga, J. Puentes, I. Palomar. Early Age Drying Shrinkage Evaluation of Self-Compacting Concretes and Pastes with Mineral Additions. *CONCREEP 10. American Society of Civil Engineers ASCE*, ISBN: 978-0-7844-7934-6 (2015). Pp. 1514-23. DOI: 10.1061/9780784479346.177 (SCI)
- T. Tioua, A. Kriker, A. Salhi, G. Barluenga. Effect of hot-dry environment on fiber-reinforced self-compacting concrete: *TECHNOLOGIES AND MATERIALS FOR RENEWABLE ENERGY, ENVIRONMENT AND SUSTAINABILITY: TMREES*; M Aillerie , C-T Salame and P Papageorgas. (eds. AIP Conference Proceedings (2016) Vol: 1758 Pp. 30024-1-9. ISSN: 0094-243X. DOI: 10.1063/1.4959420 (SCI)
- A. Salhi, A. Kriker, T. Tioua, Y. Abimiloud, G. Barluenga. Durability of visitable concrete sewer gallery under the effect of domestic wastewater. *TECHNOLOGIES AND MATERIALS FOR RENEWABLE ENERGY, ENVIRONMENT AND SUSTAINABILITY: TMREES*; M Aillerie , C-T Salame and P Papageorgas. (eds. AIP Conference Proceedings (2016) Vol: 1758 Pp. 30024-1-9. ISSN: 0094-243X. DOI: 10.1063/1.4959421 (SCI)
- Barluenga G, Ladipo O, Reichard G and Leon R T. Cement-based facades for mid-rise commercial sustainable and resilient buildings. *ICCS16 Concrete Sustainability*. J Galvez et al. (eds.) (2016) 241-249. Madrid; ISBN: 978-84-945077-7-9 (SCI)
- Rodriguez A, Barluenga G, Rio O, Palomar I, Nguyen K, Sepulcre A and Giménez M. Pumpability of sustainable SCC mixtures. *ICCS16 Concrete Sustainability*. J Galvez et al. (eds.) (2016) 797-808. Madrid; ISBN: 978-84-945077-7-9 (SCI)
- Palomar, I.; Barluenga, G. Assessment of lime-cement mortar microstructure and properties by P- and S-ultrasonic waves. *Construction and Building Materials* 2017 vol.139, p. 334- 341 (SCI)
- Tioua, T., Kriker, A., Barluenga, G., Palomar, I. Influence of date palm fiber and shrinkage reducing admixture on self-compacting concrete performance at early age in hot-dry environment. *Construction and Building Materials* 2017 Vol. 154,p. 721-733 (SCI)
- Barluenga, G., Giménez, M., Rodríguez, A., Rio, O. Quality Control Parameters for on-site evaluation of pumped Self-Compacting Concrete. *Construction and Building Materials* 2017 Vol. 154, p. 1112-1120 (SCI)
- Tioua T, Kriker A, Bali A, Barluenga A, Behim M. Properties of Self-Compacting Concrete with Natural and Synthetic Fibers. *10th ACI/RILEM International Conference on Cementitious Materials and Alternative Binders for Sustainable Concrete*. AMERICAN CONCRETE INSTITUTE (2017). Vol. ACI SP-320. p. 303-311. ISBN-13: 978-1-945487-77-4; ISSN: 0193-2527 (SCOPUS)
- Palomar, I.; Barluenga, G. A multiscale model for pervious lime-cement mortar with perlite and cellulose fibers. *Construction and Building Materials* 2018 vol. 160 p. 136-144 (SCI)
- Barluenga, G; Guardia, C.; Puentes, J. Effect of curing temperature and relative humidity on early age and hardened properties of SCC. *Construction and Building Materials* 2018 vol. 167 p. 235-242 (SCI)

- Barluenga, G; Gimenez, M; Sepulcre, A.; Palomar, I. Effect of full scale pumping at early age and on hardened microstructure and properties of SCC with fly ash in hot-dry curing conditions. *Construction and Building Materials* 2018. Vol: 191 p 1128- 1138 (SCI)
- Barluenga, G.; Puentes, J.; Palomar, I.; Guardia, C. Methodology for monitoring Cement Based Materials at Early Age combining NDT techniques. *Construction and Building Materials*. 2018 Vol. 193 p. 373- 383. (SCI).
- Palomar, I., Barluenga, G., Ball, R.J., Lawrence, M. Laboratory characterization of brick walls rendered with a pervious lime-cement mortar. *Journal of Building Engineering* 2019. Vol: 23 p. 241- 249 (SCI)
- Guardia, C., Barluenga, G., Palomar, I., Diarce, G. Thermal enhanced cement-lime mortars with phase change materials (PCM), lightweight aggregate and cellulose fibers *Construction and Building Materials* 2019 vol: 221 p. 586- 594 (SCI)
- Guardia, C., Schicchi, D.S., Caggiano, A., Barluenga, G., Koenders, E. On the capillary water absorption of cement-lime mortars containing phase change materials: Experiments and simulations. *Building Simulation*. 2019 (On-line 11/06/2019)
- Palomar, I., Barluenga, G., Guardia, C., Alonso, M.C., Álvarez, M. Rheological Characterization of Self-compacting Concrete Pastes with Polymeric Admixtures. In: *Rheology and Processing of Construction Materials*. RILEM Bookseries 2020 vol. 23 p: 491-499 (SCOPUS)
- Barluenga, G., Palomar, I., Guardia, C., Varela, H., Hernandez-Olivares, F. Rheology and Build-Up of Fresh SCC Pastes Evaluated with the Mini-slump Cone Test. In: *Rheology and Processing of Construction Materials*. RILEM Bookseries 2020 vol. 23 p: 160-167 (SCOPUS)
- Varela, H., Barluenga, G., Palomar, I., Sepulcre, A. Effects of Nanoclays on SCC Paste Rheology. In: *Rheology and Processing of Construction Materials*. RILEM Bookseries 2020 vol. 23 p: 517-524 (SCOPUS)

Not Indexed Articles

- Barluenga, G., Hernández-Olivares, F. y J. P. Calvo Busiello, Estudio experimental de reología en estado fresco y comportamiento mecánico de hormigones reforzados con fibra de vidrio álcali-resistente, en *Aplicaciones arquitectónicas de materiales*, VI Jornada, Ed. L. Villanueva Domínguez y A. García Santos, ISBN: 84-930860-4-5; (1999), pp 1-10
- Hernández-Olivares, F. y Barluenga, G.; High Strength Concrete Modified with Solid Particles Recycled from Elastomeric Materials, en *Procc. of the 6th International Symposium on Utilization of High Strength / High Performance Concrete (PRO 40 RILEM)*, Editors G. König, F. Dehn, T. Faust; ISBN: 3-934178-18-9. (2002), 1067-1078
- Puentes, J., Porta, J , Barluenga, G., Control de la fisuración en morteros monocapa de matriz de cemento con fibras de vidrio y látex, en, VII Jornada Nacional sobre Aplicaciones arquitectónicas de materiales, Ed. L. Villanueva Domínguez y A. García Santos, ISBN: 84-933016-0-4, (2003), pp 1-10
- Barluenga, G. y Hernandez-Olivares, F., “Experimental approach to the use of recycled materials in mortar and concrete for architectural applications” in *Proceedings of the International RILEM Conference on the use of the Recycled Materials in Building and Structures*, (RILEM Proceedings, PRO 40 RILEM) RILEM Publications (Editors: E. Vazquez, Ch. F. Hendriks y G. M. T. Janssen); ISBN: 2-912143-52-7, (2004) pp 403-411
- G. Melian, G. Barluenga, F. Hernández Olivares, JM Pérez, N. Flores, “Caracterización físico-mecánica de materiales cementicios puzolánicos avanzados y autocompactantes reforzados con fibras cortas de polipropileno” en *Hormigón Autocompactante (HAC)*, 1er Congreso Español sobre Hormigón Autocompactante. Ed. B. Barragán, A. Pacios y P. Serna, Universidades Politécnicas de Madrid, Cataluña y Valencia; ISBN: 978-84-612-2373-2, (2008), 617-629
- J. Puentes; G. Barluenga; I. Palomar, Estudio de comportamiento a edades tempranas de hormigones autocompactantes, Editorial EUAT-UPM; ISBN: 978-84-693-2844-8(2010), pp 1-11
- G. Barluenga, L. Ramón-Laca, R. Undurraga, F. Estirado, Estudio de los paramentos del Patio de Santo Tomás del Colegio Mayor de San Ildefonso, XVIII Congreso Internacional Conservación y Restauración de

- Bienes Culturales, Ed. A. García, AM López, F Collado, T Espejo y V. Medina, Universidad de Granada; ISBN: 978-84-338-5339-4, (2011), pp 155-158
- G. Barluenga; J. Puentes; I. Palomar, Monitorización a edades tempranas, microestructura y comportamiento endurecido de HAC con combinación de filler y adiciones minerales en Hormigón Autocompactante, Avances y Oportunidades, Ed. A. Pacios y P. Serna.; ISBN: 978-84-15302-25-4, (2012) pp 173-182
 - J. Puentes; G. Barluenga; I. Palomar, HAC con adiciones y fibras de tamaño nanométrico y micrométrico in Hormigón Autocompactante, Avances y Oportunidades, Ed. A. Pacios y P. Serna.; ISBN: 978-84-15302-25-4,(2012) pp 191-200
 - J. Puentes; G. Barluenga; I. Palomar, Early age behaviour of Self Compacting Concrete with Polypropylene fibers and CARBON nanofibers in Fibre Reinforced Concrete: Challenges and Opportunities (RILEM Proceedings, PRO 88 RILEM), Ed. J Barros et al., RILEM; ISBN: 978-2-35158-132-2; e-ISBN 978-2-35158-133-9, (2012) pp 1-12
 - Undurraga, R., F., Conde, J.F., Agua, Barluenga, G., Villegas, M.A., García-Heras, M. El hospital de Antezana (Alcalá de Henares, Madrid): estudio arqueométrico y análisis arquitectónico de ladrillos y morteros in Actas del X Congreso Ibérico de Arqueometría. Ed. Subdirección de Conservación, Restauración e Investigación IVC R de CulturArts Generalitat ; Dep Legal: V 328-2014 (2013) pp 142-155
 - Barluenga, G., Undurraga, R., Estirado, F., Laca, L. MULTIDISCIPLINARY INTEGRATED STUDY OF SAINT ILDEPHONSE'S COLLEGE, UNIVERSITY OF ALCALÁ (MADRID, SPAIN) in Proceedings of the 6th International Congress on "Science and Technology for the Safeguard of Cultural Heritage in the Mediterranean Basin". Ed A. Guarino; ISBN: 978-88-97987-05-5. (2014) pp 87-94.
 - Undurraga, R., Barluenga, G. Architectural analysis of the Antezana Hospital: a 15th century noble house in the historic city of Alcalá de Henares (Madrid, Spain) in Proceedings of the 6th International Congress on "Science and Technology for the Safeguard of Cultural Heritage in the Mediterranean Basin". Ed A. Guarino; ISBN: 978-88-97987-05-5. (2014) pp 104-111.
 - Barluenga, G, Puentes J, Palomar, I. Early age testing of self-compacting cement paste and concrete for structural repair in Structural Faults and Repair 2014. Ed MC Forde, Engineering Technics Press Edinburgh; ISBN: 0-947644-75-X (CD Rom) (2014) pp 1-12
 - M Skłodowski, M Alvarez de Buergo, G Barluenga, R Fort. Assessment of mechanical properties of the historical bricks of Burgos Gate in Alcala de Henares in Madrid in SAHC2014 – 9th International Conference on Structural Analysis of Historical Constructions. Ciudad de México (México). DOI: 10.13140/2.1.1840.7368 (2014) pp.1-12
 - Palomar, I, Barluenga, G, Puentes J. Lime-cement mixture with improved thermal and acoustic characteristics for rehabilitation in Proceedings of the International Conference on Energy Efficiency and Historic Buildings. Fundación de Casas Históricas y Singulares y Fundación Ars Civilis, Madrid; ISBN: 978-84-617-3440-5 (2014) pp. 303-317
 - J. Puentes, G. Barluenga, I. Palomar. Self-Compacting Concrete with Nanosilica and Carbon Nanofibers. Nanotechnology in Construction, NICOM 5. K. Sobolev, S.P. Shah (eds.). Springer, Taylor and Francis Group. (2015) pp 493-98. DOI: 10.1007/978-3-319-17088-6_65
 - G. Barluenga, J. Puentes, I. Palomar. Effect of Particle Size and Amount of Nanosilica and Microsilica on Early Age and Hardened Structure of Self Compacting Concrete. Nanotechnology in Construction, NICOM 5. K. Sobolev, S.P. Shah (eds.). Springer, Taylor and Francis Group. (2015) pp 493-98. DOI: 10.1007/978-3-319-17088-6_64.
 - Palomar, I, Barluenga, G, Puentes J. Assessment by non-destructive testing of new coating mortars for retrofitting the Architectural Heritage. WIT Transactions on The Built Environment. CA Brebbia, S. Hernandez (eds.). WIT Press. (2015). Vol 153, pp. 357-66. DOI: 10.2495/STR15031
 - Rio O, Nguyen K, Barluenga G, Palomar I, Giménez M, Sepulcre A and Rodriguez A. Assessment of Pumpability Quality Control and Performance Parameters of SCC-Type Mixtures. SCC 2016, 8th International RILEM Symposium on Self-Compacting Concrete, Washington DC. Ed. K H. Khayat. (2016) pp 655-664

- Barluenga G, Puentes J and Palomar I. Modelling the Early Age Drying Shrinkage and Cracking Risk of SCC. SCC 2016, 8th International RILEM Symposium on Self-Compacting Concrete, Washington DC. Ed. K H. Khayat. (2016) pp 689-698.
- Barluenga G, Ladipo O, Reichard G and Leon R T. Assessment of Resilience and Sustainability of Cement Based Facades for Mid-rise Commercial Buildings Exposed to Coastal and Seismic Hazards. 2016 International Concrete Sustainability Conference, Washington DC. NRMCA (2016) pp 1-14.
- Cynthia Guardia, Gonzalo Barluenga, Irene Palomar. Phase change material cement-lime mortars for thermal retrofitting of facades. Second International RILEM Conference on Bio-based Building Materials. RILEM. (2017) pp 632-636
- Gonzalo Barluenga, Javier Puentes, Irene Palomar y Cynthia Guardia. Combined NDT techniques for Early Age monitoring of Cement Based Materials. 2nd International RILEM/COST Conference on Early Age Cracking and Serviceability in Cement-based Materials and Structures. RILEM Publications S.A.R.L. (Ed. Staquet, Aggelis) (2017) 113-118.
- Gonzalo Barluenga, Cynthia Guardia and Javier Puentes. Effect of curing conditions on microstructure, cracking and durability of SCC. XIV DBMC, 14th International Conference on Durability of Building Materials and Components (RILEM PRO 107) (2017) pp. 163-164
- Gonzalo Barluenga, Cynthia Guardia and Javier Puentes. Effect of curing conditions on early age and hardened properties of SCC. 10th ACI/RILEM International Conference on Cementitious Materials and Alternative Binders for Sustainable Concrete. ACI/RILEM/U SHERBROKE (2017). SUPSP320 pp. 1-13
- Tahar Tioua, Abdelouahed Kriker, Abderrahim Bali, Gonzalo Barluenga and Mourad Behim. Properties of Self-Compacting Concrete with Natural and Synthetic Fibers. 10th ACI/RILEM International Conference on Cementitious Materials and Alternative Binders for Sustainable Concrete, ACI SP-320. AMERICAN CONCRETE INSTITUTE (2017) pp 303-311.
- Gonzalo Barluenga, Javier Puentes, Cynthia Guardia and Nelson Flores. Efecto de la fisuración a edades tempranas en la durabilidad de hormigones autocompactantes. HAC2018 - V Congreso Iberoamericano de Hormigón Autocompactable y Hormigones Especiales. Universidad Politécnica de Valencia (A Llano-Torre, J Rocio, P Serna, Eds.) (2018). pp: 475- 484
- Gonzalo Barluenga, Cynthia Guardia and Javier Puentes. Influencia de las condiciones de curado en las propiedades a edades tempranas de hormigones autocompactantes con filler calizo, microsilíce y nanosilíce. HAC2018 - V Congreso Iberoamericano de Hormigón Autocompactable y Hormigones Especiales. Universidad Politécnica de Valencia (A Llano-Torre, J Rocio, P Serna, Eds.) (2018). pp: 435-444
- Gonzalo Barluenga; Cynthia Guardia, Javier Puentes; Nelson Flores. Long term permeability and acid resistance of Self Compacting Concretes with micro and nano mineral additions. ICDCS2018 Sixth International Conference on Durability of Concrete Structures. University of Leeds (Ed. PAM Basheer) (2018). pp: 203-209
- Guardia, C; Barluenga, G; Palomar, I. Thermal evaluation of cement-lime based materials with PCM. 4th International Conference on Service Life Design for Infrastructures (RILEM PRO 125). RILEM Publications S.A.R.L (2018). pp: 273- 282
- Barluenga, G; Palomar, I; Rodriguez, A; Puentes, J; Flores, N. Evaluation of hardened SCC and pastes comparing ultrasonic transmitted and Echo (reflected) P-and S-waves and frequencies. 9th International RILEM Symposium on Self-Compacting Concrete. University of Dresde (2019) PP. 1-8

Scientific/Technical Reports

- F. Hernández-Olivares, G. Barluenga, J. Neila González, C. Vielba y B. Lauret; Precast concrete panels for housing. Technical Report. Department of Construction and Building Technology. Polytechnic University of Madrid 1999.
- G. Barluenga, F. Hernández-Olivares, J. P. Calvo Busiello, Structural concrete reinforcement with AR glass fibers for precast and onsite applications, Department of Construction and Building Technology. Polytechnic University of Madrid 1999.

- G. Barluenga, F. Hernández-Olivares, Investigation on self levelling slate-cement mortars. Department of Construction and Building Technology. Polytechnic University of Madrid 1999.
- F. Hernández-Olivares, G. Barluenga, Rubber filled concrete. Flexural behavior under static and dynamic loads. Department of Construction and Building Technology. Polytechnic University of Madrid 1999.
- G. Barluenga, F. Hernández-Olivares, Assessment of commercial one-coat mortars. Department of Construction and Building Technology. Polytechnic University of Madrid 1999.
- F. Hernández-Olivares, G. Barluenga Badiola, J P. Calvo Busiello, New applications of AR glass fibers for structural reinforcement. Department of Construction and Building Technology. Polytechnic University of Madrid 2000.
- G. Barluenga, I Herrera, F. Hernández Olivares, Petrologic study of hornfels aggregates from the area of Salamanca and applications for High strength concretes, Department of Construction and Building Technology. Polytechnic University of Madrid 2000.
- G. Barluenga, F. Hernández Olivares, I. Serra Lasa, Development of self-levelling slate-cement mortars for housing applications, Department of Construction and Building Technology. Polytechnic University of Madrid 2001.
- G. Barluenga, F. Hernández Olivares, Petrography comparative analysis of hornfels aggregates. Department of Construction and Building Technology. Polytechnic University of Madrid 2002.
- G. Barluenga, F. Hernández Olivares, Study of sprayed fiber mortars for passive fire protection. Department of Construction and Building Technology. Polytechnic University of Madrid 2002.
- F. Hernández Olivares, G. Barluenga, M. Del Río, J Santa Cruz, GRC panels for low cost housing and other applications in emergency and catastrophic situations, Department of Construction and Building Technology. Polytechnic University of Madrid 2002.
- G. Barluenga, F. Hernández Olivares, Cracking assessment of concretes with low amounts of Cem-FIL glass fibers, Department of Construction and Building Technology. Polytechnic University of Madrid 2003.
- G. Barluenga, F. Hernández Olivares, Comparative analysis of cracking control efficiency of different types of short fibers. Department of Construction and Building Technology. Polytechnic University of Madrid 2004.
- G. Barluenga, F. Hernández Olivares, Characterization of a AR glass fiber mortar for industrial pavements. Department of Construction and Building Technology. Polytechnic University of Madrid 2004.
- G. Barluenga, F. Hernández Olivares, Improved behavior of SCC with Cem-FIL Glass fibers. Department of Construction and Building Technology. Polytechnic University of Madrid 2004.
- G. Barluenga, Análisis of fiber-matrix interaction at early ages of glass fibers. Department of Construction and Building Technology. Polytechnic University of Madrid 2005.
- G. Barluenga, Study on the inclusión of sustainability and innovation criteria in the Spanish Building Regulations for Building Quality improvement. Technical Report, Department of Architecture. University of Alcalá, 2006.
- G. Barluenga, Constructive analysis and Materials Characterization of floor slabs in a XV century noble house (Casa de la Rua, Oviedo, Spain). Technical Report, Department of Architecture. University of Alcalá, 2009.

Patents

- (ES 2 173 804 B2) Gonzalo Barluenga Badiola and Francisco Hernández Olivares, Vertical joint configuration for precast façade elements with the addition of a double bevelled external piece.
- (ES 2 238 169 B2) Francisco Fernández Martínez, José María Gascó Montés, Francisca Guerrero López, Maria Cruz Díaz Álvarez, Cristóbal Colón Hernández, Gonzalo Barluenga and Francisco Hernández-Olivares. Material formed by deinking sludge of press paper and its use as soil conditioner and dry seeded substrate. (2006).
- (ES 2 548 221 B2) Irene Palomar and Gonzalo Barluenga. Lime and cement material with enhancement thermal and acoustic performance (2014)
- (ES-S-201600785) Hugo Varela and Gonzalo Barluenga. Frameless ventilated façade with folded sheet.

Researching stays (granted)

- Design and characterization of adhesive bonded joints for architectural applications. Glasgow Marine Technology Center. University of Glasgow, UK. May-July 2000. Supervisor: Prof. Mike J Cowling.
- Design and setup of full-scale tests for seismic assessment. FE simulation of dynamic behaviour of precast façade elements and joints. Department of Civil and Environmental Engineering, Georgia Institute of Technology, USA. May-July 2001. Supervisor: Prof. Dr. Roberto T Leon.
- Design and assessment of GRC panels for low cost housing and other applications in emergency and catastrophic situations. Technological Center DRACE (Torrejón de Ardoz, Madrid, Spain). January-June 2003.
- Service behaviour, design and modelling of advanced high performance materials for building construction Department of Civil and Environmental Engineering, Virginia Institute of Technology and State University, USA. Aug 2014-June 2015. Supervisor: Prof. Dr. Roberto T Leon.

Conference Presentations

International Conferences

- G. Barluenga. Adhesive bonding of architectural panels. Postgraduate Colloquium, Department of Mechanical Engineering, University of Glasgow. Glasgow (UK). June 2000.
- G. Barluenga y F. Hernandez Olivares. Study of response of panels and joints of façade systems of concrete precast elements under static and dynamic actions, Experimental results and computer analysis. VI International Conference IFHS, Vertical City. Madrid 2000.
- F. Hernández Olivares y G. Barluenga. Experimental analysis of static and dynamic behaviour of fibre reinforced concrete with crumbed tyres rubber and polypropylene short fibres. VI International Conference IFHS, Vertical City. Madrid 2000.
- R. T. León, J. A. Swanson y G. Barluenga. Modelización del comportamiento sísmico de uniones atornilladas. 2º Congreso Iberoamericano de Ingeniería Sísmica. Madrid. October 2001.
- F. Hernández Olivares y G. Barluenga. High strength concrete modified with solid particles of elastomeric materials. 6th International Symposium on Utilization of HSC/HPC. Leipzig (Germany). 2002
- G. Barluenga, F. Hernández Olivares. Experimental approach to the use of recycled materials in mortar and concrete for architectural applications. Conference on the use of the Recycled Materials in Building and Structures, RILEM 2004. Barcelona. 2004.
- F. Hernández Olivares, G. Barluenga. Revestimiento de hormigón en túneles: comportamiento al fuego del hormigón de alta resistencia. Jornada Técnica Internacional, La seguridad contra incendios en el transporte terrestre de pasajeros. Santander. July 2005.
- N. Flores, G. Barluenga, F. Hernández Olivares, G. Melian. Cracking and permeability behaviour of natural pozzolan cement concretes with pp fibers and silica fume. ICCS16 - 16th International Conference on Composite Structures. Oporto, Portugal. June 2011.
- G. Melian, G. Barluenga, F. Hernandez-Olivares, and N. Flores. INNOVATIVE PROPOSALS OF TOUGHENED FIBER REINFORCED SELF COMPACTING POZZOLANIC CONCRETE FOR STRUCTURAL APPLICACIONES. ICCS16 - 16th International Conference on Composite Structures. Oporto, Portugal. June 2011.
- G. Barluenga, L. Ramón-Laca, R. Undurraga, F. Estirado. Estudio de los paramentos del Patio de Santo Tomás del Colegio Mayor de San Ildefonso. XVIII Congreso Internacional Conservación y Restauración de Bienes Culturales. Granada, Spain. November 2011.
- J. Puentes; G. Barluenga; I. Palomar. Early age behaviour of Self Compacting Concrete with Polypropylene fibers and CARBON nanofibers. BEFIB2012 – Fibre reinforced concrete. Guimaraes, Portugal. September 2012.
- G. Barluenga; R. Undurraga, L. Ramón-Laca, F. Estirado, Methodology for the study of the walls of the Patio de Santo Tomás, Colegio Mayor de San Ildefonso (Alcalá de Henares). International Congress on

- Science and Technology for the Conservation of Cultural Heritage, Santiago de Compostela, Spain. October 2012.
- Barluenga, G., Undurraga, R., Estirado, F., Conde, J.F., Agua, F., Villegas, M.A., García-Heras, M. Bricks and mortars from the "Patio de Santo Tomás", Alcalá University (Madrid, Spain): a combined study of fabric characterization and building morphology. International Congress on Science and Technology for the Conservation of Cultural Heritage Santiago de Compostela, Spain. October 2012.
 - G. Barluenga; J. Puentes; I. Palomar, Monitorización a edades tempranas, microestructura y comportamiento endurecido de HAC con combinación de filler y adiciones minerales, 3º Congreso iberoamericano sobre hormigón autocompactante. Avances y oportunidades, Madrid, December 2012
 - J. Puentes; G. Barluenga; I. Palomar, Caracterización de HAC con adiciones y fibras de tamaño nanométrico y micrométrico, Congreso: 3º Congreso iberoamericano sobre hormigón autocompactante. avances y oportunidades, Madrid, December 2012.
 - G. Barluenga; J. Puentes; I. Palomar, Early age monitoring and hardened properties of SCC with limestone filler and active mineral additions. Fifth North American Conference on the Design and Use of Self-Consolidating Concrete, SCC 2013, Chicago, May 2013
 - G Barluenga, R Undurraga, F Estirado, L Laca, Multidisciplinary integrated study of Saint Ildephonse's College, University of Alcalá (Madrid, Spain). 6th International Congress of Athens on Cultural Heritage, Athens (Greece), Oct 2013. PLENARY LECTURE
 - G Barluenga, R Undurraga. Architectural analysis of the Antezana Hospital: a 15th century noble house in the historic city of Alcalá de Henares (Madrid, Spain). 6th International Congress of Athens on Cultural Heritage, Athens (Greece), Oct 2013.
 - R. Undurraga, J.F. Conde, F. Agua, G. Barluenga, M.A. Villegas, M. García-Heras, Historical and experimental integrated study on brick masonry identification: comparison of two heritage buildings in the city of Alcalá de Henares (Madrid, Spain). 2nd International Congress Science and Technology for the Conservation of Cultural Heritage, Seville (Spain), June 2014.
 - G. Barluenga; J. Puentes; I. Palomar, Early age testing of self-compacting cement paste and concrete for structural repair. 15th Conference on Structural Faults and Repair 2014. Concrete, Materials and Conservation, Imperial College, London (UK), July 2014.
 - I. Palomar, G. Barluenga, J. Puentes. Lime-cement mortars with improved thermal and acoustic performance for building retrofitting. International Conference on Energy Efficiency in Historic Buildings. Madrid (Spain). September 2014.
 - M Skłodowski, M Alvarez de Buergo, G Barluenga, R Fort, Assessment of mechanical properties of the historical bricks of Burgos Gate in Alcalá de Henares in Madrid. SAHC2014 – 9th International Conference on Structural Analysis of Historical Constructions, Mexico City (Mexico), October 2014.
 - I. Palomar, G. Barluenga, J. Puentes. Enhanced coating mortars for Built Heritage's retrofitting. I International Meeting of Young Researchers on Heritage - PatrimoniUN10. Baeza (España). November 2014.
 - G. Barluenga, J. Puentes, I. Palomar. Effect of Particle Size and Amount of Nanosilica and Microsilica on Early Age and Hardened Structure of Self Compacting Concrete. Nanotechnology in construction, NICOM 5. Chicago (USA). June 2015.
 - J. Puentes, G. Barluenga, I. Palomar, Self-Compacting Concrete with Nanosilica and Carbon Nanofibers. Nanotechnology in construction, NICOM 5. Chicago (USA). June 2015.
 - I. Palomar, G. Barluenga, J. Puentes. Assessment by non-destructive testing of new coating mortars for retrofitting the Architectural Heritage. 14th International Conference on Studies, Repairs and Maintenance of Heritage Architecture - STREMAH 2015. A Coruña (España). July 2015.
 - G. Barluenga, I. Palomar, J. Puentes. Early Age Drying Shrinkage Evaluation of Self-Compacting Concretes and Pastes with Mineral Additions. CONCREEP 10 - Mechanics and Physics of Creep, Shrinkage and Durability of Concrete and Concrete Structures. Viena (Austria). September 2015.
 - Salhi A, Kriker A, Tioua T, Abimiloud Y, Barluenga G. Durability of visitable concrete sewer gallery under the effect of domestic wastewater. TMREES 16, Beirut (Lebanon), April 2016.
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- Tioua T, Kriker A, Salhi A, Barluenga G, Effect of hot-dry environment on fiber-reinforced self-compacting concrete. TMREES 16, Beirut (Lebanon), April 2016.
 - Rio O, Nguyen K, Barluenga G, Palomar I, Giménez M, Sepulcre A and Rodriguez A. Assessment of Pumpability Quality Control and Performance Parameters of SCC-Type Mixtures. SCC 2016, 8th International RILEM Symposium on Self-Compacting Concrete, Washington DC.. May 2016
 - Barluenga G, Puentes J and Palomar I. Modelling the Early Age Drying Shrinkage and Cracking Risk of SCC. SCC 2016, 8th International RILEM Symposium on Self-Compacting Concrete, Washington DC. May 2016.
 - Barluenga G, Ladipo O, Reichard G and Leon R T. Assessment of Resilience and Sustainability of Cement Based Facades for Mid-rise Commercial Buildings Exposed to Coastal and Seismic Hazards. 2016 International Concrete Sustainability Conference, Washington DC. NRMCA May 2016.
 - Barluenga G, Ladipo O, Reichard G and Leon R T. Cement-based facades for mid-rise commercial sustainable and resilient buildings. ICCS16 Concrete Sustainability, Madrid. June 2016.
 - Rodriguez A, Barluenga G, Rio O, Palomar I, Nguyen K, Sepulcre A and Giménez M. Pumpability of sustainable SCC mixtures. ICCS16 Concrete Sustainability, Madrid, June 2016.
 - Cynthia Guardia, Gonzalo Barluenga, Irene Palomar. Phase Change Material cement mortars for thermal retrofitting of façades. Second International RILEM Conference on Bio-based Building Materials. Clermont-Ferrand (France). June 2017.
 - Gonzalo Barluenga, Javier Puentes, Cynthia Guardia. Effect of curing conditions on microstructure, cracking and durability of SCC. 14th International Conference on Durability of Building Materials and Components. Ghent (Belgium). May 2017
 - Gonzalo Barluenga, Javier Puentes, Irene Palomar, Cynthia Guardia. Combined NDT techniques for Early Age monitoring of Cement Based Materials. 2nd International RILEM/COST Conference on Early Age Cracking and Serviceability in Cement-based Materials and Structures. Brussels (Belgium). September 2017
 - Gonzalo Barluenga, Cynthia Guardia, Javier Puentes. Effect of curing conditions on early ages and hardened properties of limestone filler SCC with Microsilica and Nanosilica. 10th ACI/RILEM International Conference on Cementitious Materials and Alternative Binders for Sustainable Concrete. Montreal (Canada) October 2017.
 - Tahar Tioua, Abdelouahed Kriker, Abderrahim Bali, Gonzalo Barluenga and Mourad Behim. Properties of Self-Compacting Concrete with Natural and Synthetic Fibers. 10th ACI/RILEM International Conference on Cementitious Materials and Alternative Binders for Sustainable Concrete. Montreal (Canada). October 2017.
 - Gonzalo Barluenga, Javier Puentes, Cynthia Guardia, Nelson Flores. Efecto de la fisuración a edades tempranas en la durabilidad de hormigones autocompactantes. Congreso: HAC2018 - V Congreso Iberoamericano de Hormigón Autocompactable y Hormigones Especiales. Valencia (Spain). March 2018.
 - Gonzalo Barluenga, Cynthia Guardia, Javier Puentes. Influencia de las condiciones de curado en las propiedades a edades tempranas de hormigones autocompactantes con filler calizo, microsilíce y nanosilíce. Congreso: HAC2018 - V Congreso Iberoamericano de Hormigón Autocompactable y Hormigones Especiales. Valencia (Spain). March 2018.
 - Gonzalo Barluenga; Cynthia Guardia, Javier Puentes; Nelson Flores. Long term permeability and acid resistance of Self Compacting Concretes with micro and nano mineral additions. ICDCS2018 Sixth International Conference on Durability of Concrete Structures. Leeds (Great Britain). July 2018
 - Guardia, C; Barluenga, G; Palomar, I. Thermal evaluation of cement-lime based materials with PCM. 4th International Conference on Service Life Design for Infrastructures / RILEM WEEK. Delft (Nederland). August 2018
 - Barluenga G, Palomar I, Rodríguez A, Puentes J, Flores N. Evaluation of hardened SCC and pastes comparing ultrasonic transmitted and Echo (reflected) P-and S-waves and frequencies. 9th International Symposium on Self-Compacting Concrete (SCC 9). Dresden (Germany). September 2019
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- Barluenga G, Palomar I, Guardia C, Varela H, Hernandez-Olivares. Rheology and Build-Up of Fresh SCC Pastes Evaluated with the Mini-slump Cone Test. 9th International Symposium on Self-Compacting Concrete (SCC 9). Dresden (Germany). September 2019
- Palomar I, Barluenga G, Guardia C, Alonso MC, Álvarez M. Rheological Characterization of Self-compacting Concrete Pastes with Polymeric Admixtures. 9th International Symposium on Self-Compacting Concrete (SCC 9). Dresden (Germany). September 2019
- Varela H, Barluenga G, Palomar I, Sepulcre A. Effects of Nanoclays on SCC Paste Rheology. 9th International Symposium on Self-Compacting Concrete (SCC 9). Dresden (Germany). September 2019

National Conferences

- G. Barluenga, F. Hernandez Olivares y J. P. Calvo. Estudio experimental de reología en estado fresco y comportamiento mecánico de hormigones reforzados con fibra de vidrio AR. VI Jornada Nacional sobre aplicaciones arquitectónicas de materiales. Madrid. 2000.
- J. Puentes, J. Porta, E. López y G. Barluenga. Control de la fisuración en morteros monocapa de matriz de cemento con fibras vidrio y látex. VII Jornada Nacional sobre aplicaciones arquitectónicas de materiales. Madrid 2003.
- F. Hernández Olivares, B. Witoszek, B. Parga Landa, G. Barluenga, M. Bollati. Diseño de firmes de rodadura de hormigón con caucho reciclado de neumáticos. VI Congreso Nacional de Firmes: Normalización e Innovación. León (Spain). 2004
- G. Melian, G. Barluenga, F. Hernández Olivares, JM Pérez, N. Flores. Caracterización físico-mecánica de materiales cementicios puzolánicos avanzados y autocompactantes reforzados con fibras cortas de polipropileno. I Congreso Nacional sobre Hormigón Autocompactante, HAC 2008. Valencia (Spain). February 2008.
- G. Barluenga, J. Puentes, I. Palomar. Estudio de comportamiento a edades tempranas de hormigones autocompactantes. II Congreso Nacional de Investigación en Edificación. Madrid. December 2010
- A. Marín, G. Barluenga. Eladio Dieste y la evolución de la cerámica armada. Congreso: II Congreso Nacional de Investigación en Edificación. Madrid. 2010

PhD Thesis Supervision

- Gonzalo Melian. Applications of advanced fiber reinforced concretes with regional components. University of Las Palmas de Gran Canaria. School of Architecture (10/11/2006)
- Javier Puentes. Early age cracking control of advanced concretes for architectural applications. University of Alcalá. School of Architecture (22/07/2015)
- Irene Palomar. Coating mortars for acoustic and thermal improvement in construction, refurbishment and restoration of Architectural Heritage. University of Alcalá. School of Architecture (21/09/2017).
- Ana Marín. Eladio Dieste. Form and Structure. Reinforced ceramic: The invention of a new Material. University of Alcalá. School of Architecture (2014, in progress).
- Cynthia Guardia. Thermal performance improvement through façade retrofitting with Phase Change Materials (PCM). University of Alcalá. School of Architecture (2014, in progress)
- Hugo Varela. Nanotechnology applied to Advanced Architectural Concrete. University of Alcalá. School of Architecture (2017, in progress)

Other scholarly and researching activities and awards

- Head of the Department of Architecture, University of Alcalá (December 2007-February 2011).
- First Director of the PhD Program on Architecture, University of Alcalá (2008-2011; 2016-).

- Spanish National evaluation for Professor Tenure positions (2007) and Associate (2006) in Architectural Construction and Building Sciences, Spanish Ministry of Education.
- Reviewer of periodicals included in JCR: Cement and Concrete Research, Cement and Concrete Composites, Construction and Building Materials, Cultural Heritage, edited by Elsevier. Indian Journal of Engineering & Materials Sciences, edited by National Institute of Science Communication and Information Resources, India. KSCE Journal of Civil Engineering, edited by the Korean Society of Civil Engineering. Nanoscience and Nanotechnology Letters, edited by American Scientific Publishers, Materiales de Construcción, edited by IccET (CSIC).
- National assessment of 3 six-year-researching periods by the Spanish Commission for the assessment of researching activities (1999-2004; 2005-10; 2011-17)
- Scientific and Researching outstanding track award by the Spanish Ministry of Science and Innovation in the Program for Incorporation of Researchers I3 (2009).
- Organiser of scientific activities in the Week of Science of the Community of Madrid (2010-2011-2012-2013-2016-2017)