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### Kişisel Bilgiler

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### Uluslararası Araştırmacı ID'leri

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Publons / Web Of Science ResearcherID: A-7227-2016

ScopusID: 56625890200

Yoksis Araştırmacı ID: 135831

### Eğitim Bilgileri

Doktora, Universiteit Gent, Faculty of Bioscience Engineering, Department of Biochemical and Microbial Technology, Belçika 2013 - 2016

Yüksek Lisans, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Türkiye 2011 - 2013

Lisans, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, Türkiye 2006 - 2011

### Yabancı Diller

İngilizce, C2 Ustalık

### Araştırma Alanları

Çevre Mikrobiyolojisi, Çevre Biyoteknolojisi

### Akademik Unvanlar / Görevler

Dr. Öğr. Üyesi, Hacettepe Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, 2019 - Devam Ediyor

Dr. Öğr. Üyesi, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, İnşaat Mühendisliği, 2017 - 2019

Araştırma Görevlisi, Universiteit Gent, Faculty of Bioscience Engineering, Department of Biochemical and Microbial Technology, 2013 - 2016

Araştırma Görevlisi, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, 2011 - 2012

### SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- Variation of microbial self-healing performance of cementitious composites with their biogranule content**  
SÖNMEZ TUĞLUCA M., ERŞAN Y. Ç., ŞAHMARAN M.  
CEMENT & CONCRETE COMPOSITES, 2024 (SCI-Expanded)

- II. **Production of calcium carbonate-precipitating biomass powder as self-healing additive in concrete and performance evaluation in mortar**  
Zhu X, Sakarika M., Ganigué R., Van Tittelboom K., ERŞAN Y. Ç., Boon N., De Belie N.  
Cement and Concrete Composites, cilt.138, 2023 (SCI-Expanded)
- III. **Life cycle assessment of lightweight concrete containing recycled plastics and fly ash**  
ERŞAN Y. Ç., GÜLÇİMEN S., Imis T. N., Saygin O., UZAL N.  
EUROPEAN JOURNAL OF ENVIRONMENTAL AND CIVIL ENGINEERING, cilt.26, sa.7, ss.2722-2735, 2022 (SCI-Expanded)
- IV. **Production and compatibility assessment of denitrifying biogranules tailored for self-healing concrete applications**  
Sönmez M., Erşan Y. Ç.  
CEMENT & CONCRETE COMPOSITES, cilt.126, 2022 (SCI-Expanded)
- V. **The effect of chemical- versus microbial-induced calcium carbonate mineralization on the enhancement of fine recycled concrete aggregate: A comparative study**  
Sönmez M., Ilcan H., Dundar B., Yıldırım G., Erşan Y. Ç., Şahmaran M.  
JOURNAL OF BUILDING ENGINEERING, cilt.44, 2022 (SCI-Expanded)
- VI. **Microbially induced desaturation and carbonate precipitation through denitrification: A review**  
Lin W., Lin W., Cheng X., Chen G., ERŞAN Y. Ç.  
Applied Sciences (Switzerland), cilt.11, sa.17, 2021 (SCI-Expanded)
- VII. **Compatibility and biomineralization oriented optimization of nutrient content in nitrate-reducing-biogranules-based microbial self-healing concrete**  
Kardogan B., Sekercioglu K., ERŞAN Y. Ç.  
Sustainability (Switzerland), cilt.13, sa.16, 2021 (SCI-Expanded)
- VIII. **Surface Consolidation of Maastricht Limestone by Means of Bacillus Sphaericus under Varying Treatment Conditions**  
ERŞAN Y. Ç., Wang J., Fraeye D., Boon N., De Belie N.  
Journal of Materials in Civil Engineering, cilt.32, sa.11, 2020 (SCI-Expanded)
- IX. **Nitrite producing bacteria inhibit reinforcement bar corrosion in cementitious materials**  
Erşan Y. Ç., Van Tittelboom K., Boon N., De Belie N.  
Scientific Reports, cilt.8, sa.1, 2018 (SCI-Expanded)
- X. **Impact of air entraining admixtures on biogenic calcium carbonate precipitation and bacterial viability**  
Bundur Z. B., Amiri A., Ersan Y. Ç., Boon N., De Belie N.  
Cement and Concrete Research, cilt.98, ss.44-49, 2017 (SCI-Expanded)
- XI. **Enhanced crack closure performance of microbial mortar through nitrate reduction**  
Erşan Y. Ç., Hernandez-Sanabria E., Boon N., De Belie N.  
Cement and Concrete Composites, cilt.70, ss.159-170, 2016 (SCI-Expanded)
- XII. **Nitrate reducing CaCO<sub>3</sub> precipitating bacteria survive in mortar and inhibit steel corrosion**  
Erşan Y. Ç., Verbruggen H., De Graeve I., Verstraete W., De Belie N., Boon N.  
Cement and Concrete Research, cilt.83, ss.19-30, 2016 (SCI-Expanded)
- XIII. **Application of microorganisms in concrete: a promising sustainable strategy to improve concrete durability**  
Wang J., Ersan Y. Ç., Boon N., De Belie N.  
Applied Microbiology and Biotechnology, cilt.100, sa.7, ss.2993-3007, 2016 (SCI-Expanded)
- XIV. **Bio-Based Self-Healing Concrete: From Research to Field Application**  
Tziviloglou E., Van Tittelboom K., Palin D., Wang J., Sierra-Beltran M. G., Ersan Y. Ç., Mors R., Wiktor V., Jonkers H. M., Schlangen E., et al.  
SELF-HEALING MATERIALS, cilt.273, ss.345-385, 2016 (SCI-Expanded)
- XV. **Microbially induced CaCO<sub>3</sub> precipitation through denitrification: An optimization study in minimal nutrient environment**  
Erşan Y. Ç., de Belie N., Boon N.

- Biochemical Engineering Journal, cilt.101, ss.108-118, 2015 (SCI-Expanded)
- XVI. **Screening of bacteria and concrete compatible protection materials**  
Erşan Y. Ç., Da Silva F. B., Boon N., Verstraete W., De Belie N.  
Construction and Building Materials, cilt.88, ss.196-203, 2015 (SCI-Expanded)
- XVII. **Self-protected nitrate reducing culture for intrinsic repair of concrete cracks**  
Erşan Y. Ç., Gruyaert E., Louis G., Lors C., De Belie N., Boon N.  
Frontiers in Microbiology, cilt.6, 2015 (SCI-Expanded)
- XVIII. **The effect of seed sludge type on aerobic granulation via anoxic-Aerobic operation**  
Erşan Y. Ç., Erguder T. H.  
Environmental Technology (United Kingdom), cilt.35, sa.23, ss.2928-2939, 2014 (SCI-Expanded)
- XIX. **The effects of aerobic/anoxic period sequence on aerobic granulation and COD/N treatment efficiency**  
Erşan Y. Ç., Erguder T. H.  
Bioresource Technology, cilt.148, ss.149-156, 2013 (SCI-Expanded)

## **Diğer Dergilerde Yayınlanan Makaleler**

- I. **Self-Healing Performance of Biogranule Containing Microbial Self-Healing Concrete Under Intermittent Wet/Dry Cycles**  
ERŞAN Y. Ç.  
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGISI, cilt.24, sa.1, ss.323-332, 2021 (ESCI)
- II. **Overlooked Strategies in Exploitation of Microorganisms in the Field of Building Materials**  
ERŞAN Y. Ç.  
ECOLOGICAL WISDOM INSPIRED RESTORATION ENGINEERING, ss.19-45, 2019 (Hakemli Dergi)
- III. **Volume fraction, thickness, and permeability of the sealing layer in microbial self-healing concrete containing biogranules**  
Erşan Y. Ç., Palin D., Yengec Tasdemir S. B., Taşdemir K., Jonkers H. M., Boon N., De Belie N.  
Frontiers in Built Environment, cilt.4, 2018 (Scopus)
- IV. **Resilient Denitrifiers Wink at Microbial Self Healing Concrete**  
Erşan Y. Ç., De Belie N., Boon N.  
International Journal of Environmental Engineering, cilt.2, ss.37-41, 2015 (Hakemli Dergi)

## **Kitap & Kitap Bölümleri**

- I. **Overlooked Strategies in Exploitation of Microorganisms in the Field of Building Materials**  
Erşan Y. Ç.  
Ecological Wisdom Inspired Restoration Engineering, Varenyam Achal, Abhijit Mukherjee, Editör, Springer-Verlag, Singapore, ss.19-45, 2019

## **Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar**

- I. **Improvement of fine recycled aggregates by microbially induced CaCO<sub>3</sub> precipitation**  
Arıkan E., Bilici S. N., Erşan Y. Ç.  
6th Eurasia Waste Management Symposium, İstanbul, Türkiye, 24 - 26 Ekim 2022, cilt.1, ss.606-613
- II. **A novel non-axenic granulated culture based microbial self-healing concrete**  
Özbay B., Erşan Y. Ç.  
6th Eurasia Waste Management Symposium, 24 - 26 Ekim 2022, cilt.1, ss.614-622
- III. **Pre-treatment procedure for effective bioleaching of metals from large waste printed circuit board**

**(WPCB) pieces**

Konakçı R., Pekcan M., Erşan Y. Ç.

6th Eurasia Waste Management Symposium, İstanbul, Türkiye, 24 - 26 Ekim 2022, cilt.1, ss.68-76

- IV. **Biogranules Simultaneously Hydrolyzing Urea and Reducing Nitrate and Their Biomineralization Performance**  
Soluk M., Kardoğan B., Erşan Y. Ç.  
6th Eurasia Waste Management Symposium, İstanbul, Türkiye, 24 - 26 Ekim 2022, cilt.1, ss.665-672
- V. **Improvement of Fine Recycled Aggregates by Microbially Induced CaCO<sub>3</sub> Precipitation**  
Arikan E., Bilici S. N., ERŞAN Y. Ç.  
6th EurAsia Waste Management Symposium (EWMS), İstanbul, Türkiye, 24 - 26 Ekim 2022, ss.606-613
- VI. **Biogranules Simultaneously Hydrolyzing Urea and Reducing Nitrate and Their Biomineralization Performance**  
Soluk M., Kardogan B., ERŞAN Y. Ç.  
6th EurAsia Waste Management Symposium (EWMS), İstanbul, Türkiye, 24 - 26 Ekim 2022, ss.665-672
- VII. **Concrete compatible biogranules: a novel healing agent for bio-based self-healing concrete**  
Sönmez M., Erşan Y. Ç.  
International Conference on Cement-Based Materials Tailored for a Sustainable Future, İstanbul, Türkiye, 27 - 29 Mayıs 2021, ss.302-310
- VIII. **Self-protected bacteria for healing and corrosion inhibition in concrete**  
Erşan Y. Ç., Boon N., De Belie N.  
1st International conference on Microbial Biotechnology in Construction Materials and Geotechnical Engineering (MBCMG2020), Nanjing, Çin, 6 - 07 Kasım 2020, ss.52-53
- IX. **Production of concrete compatible biogranules for self-healing concrete applications**  
Sonmez M., ERŞAN Y. Ç.  
7th International Conference on Concrete Repair, Concrete Solutions 2019, Cluj-Napoca, Romanya, 30 Eylül - 02 Ekim 2019, cilt.289, sa.1002
- X. **Durability of self-healing concrete**  
De Belie N., Van Belleghem B., ERŞAN Y. Ç., Van Tittelboom K.  
7th International Conference on Concrete Repair, Concrete Solutions 2019, Cluj-Napoca, Romanya, 30 Eylül - 02 Ekim 2019, cilt.289, sa.1003
- XI. **Microbial self-healing as two-step mechanism for corrosion inhibition in cracked concrete**  
De Belie N., Erşan Y. Ç., Van Tittelboom K.  
73rd International Conference on Innovative Materials for Sustainable Civil Engineering, Nanjing, Çin, 26 - 30 Ağustos 2019, ss.94
- XII. **Corrosion prevention in cracked concrete by denitrifying bacterial granules**  
De Belie N., Erşan Y. Ç., Van Tittelboom K.  
7th International Conference on Self-Healing Materials (ICSHM 2019), Yokohama, Japonya, 3 - 06 Haziran 2019, ss.109
- XIII. **Optimizing nutrient content of microbial self-healing concrete**  
Erşan Y. Ç., Akın Y.  
6th International Symposium on Life-Cycle Civil Engineering, IALCCE 2018, Ghent, Belçika, 28 - 31 Ekim 2018, ss.2241-2246
- XIV. **Biotechnology offers more durable and sustainable cementitious composites**  
ERŞAN Y. Ç.  
Final Conference of RILEM TC 253-MCI on Microorganisms and Cementitious Materials Interactions, Toulouse, Fransa, 25 - 26 Haziran 2018, cilt.2, ss.379-386
- XV. **Healing depth and functionality regain of non-axenic granulated culture based self-healing concrete**  
Erşan Y. Ç., Palm D., Jonkers H., Boon N., De Belie N.  
Final Conference of RILEM TC 253-MCI on Microorganisms and Cementitious Materials Interactions, Toulouse, Fransa, 25 - 26 Haziran 2018, cilt.2, ss.511-520
- XVI. **Granules with activated compact denitrifying core (ACDC) for self-healing concrete with corrosion**

### **protection functionality**

Erşan Y. Ç., Boon N., De Belie N.

Final Conference of RILEM TC 253-MCI on Microorganisms and Cementitious Materials Interactions, Toulouse, Fransa, 25 - 26 Haziran 2018, cilt.2, ss.475-484

- XVII. Surface consolidation of natural stones by use of bio-agents and chemical consolidate**  
Wang J., Fraeye D., Erşan Y. Ç., De Muynck W., Boon N., De B. N.  
14th International Conference on Durability of Building Materials and Components, Ghent, Belçika, 29 - 31 Mayıs 2017
- XVIII. Non Axenic NO3 Reducing Culture Supersedes Axenic Cultures in Development of Microbial Self Healing Concrete**  
Erşan Y. Ç., De Belie N., Boon N.  
E-MRS Fall Meeting 2015, Warszawa, Polonya, 15 - 18 Eylül 2015
- XIX. Mechanical characteristics of the calcite precipitated in cracks of self-healing concrete studied by the indentation technique**  
Gruyaert E., Louis G., Betrancourt D., ERŞAN Y. Ç., Lors C., Damidot D., De Belie N.  
E-MRS 2015 Fall meeting, Warszawa, Polonya, 15 - 18 Eylül 2015
- XX. Microbial self healing concrete denitrification as an enhanced and environment friendly approach**  
Erşan Y. Ç., Boon N., De Belie N.  
5th International Conference on Self-Healing Materials, North-Carolina, Amerika Birleşik Devletleri, 22 - 24 Haziran 2015
- XXI. A rapjd and repeatable method for est ablishing the water permeability of cracked mortar specimens**  
Palin D., Ersan Y. Ç., Wiktor V., De Belie N., Jonkers H.  
2015 fib Symposium: Concrete - Innovation and Design, Copenhagen, Danimarka, 18 - 20 Mayıs 2015, ss.333-334
- XXII. Ureolysis and denitrification based microbial strategies for self-healing concrete**  
Ersan Y. Ç., Wang J., Boon N., De Belie N.  
5th International Conference on Concrete Repair, Belfast, Birleşik Krallık, 1 - 03 Eylül 2014, ss.59-64
- XXIII. Aerobik Anoksik Periyot Sıralama Farkının Ardışık Kesikli Reaktörlerde Granül Üretimine ve Azot KOİ Arıtım Verimine Etkisi**  
Erşan Y. Ç., Erguder T. H.  
ÇEVKOS VII, İstanbul, Türkiye, 22 - 23 Kasım 2012
- XXIV. Effect of Seed Sludge Type on Aerobic Granulation and Treatment Efficiency of Granules**  
Erşan Y. Ç., Erguder T. H.  
International Conference on Environmental Science and Technology, Texas, Amerika Birleşik Devletleri, 25 - 29 Haziran 2012

### **Desteklenen Projeler**

De Belie N., De Graeve I., Diğer Ülkelerdeki Özel Organizasyonlar Tarafından Desteklenmiş Proje, Impact of Self-Healing Engineered Materials on Steel Corrosion in Reinforced Concrete, 2014 - 2018

De Belie N., Schmidt A., 7. Çerçeve Programı Projesi, Training Network for Self Healing Materials from Concepts to Market, 2012 - 2016

Bayramoğlu T. H., TÜBİTAK Projesi, The Investigation of Aerobic Granulation and Its Use For Nitrogen Removal in Sequencing Batch Reactors, 2011 - 2012

Bayramoğlu T. H., Yükseköğretim Kurumları Destekli Proje, Investigation of Biological Nitrogen Removal with Granules, 2010 - 2011

### **Metrikler**

Yayın: 48

Atıf (WoS): 641

Atıf (Scopus): 805

H-İndeks (WoS): 11

H-İndeks (Scopus): 11

## **Kongre ve Sempozyum Katılımı Faaliyetleri**

First International Conference on Microbial Biotechnology in Construction Materials and Geotechnical Engineering,

Davetli Konuşmacı, Nanjing, Çin, 2020

Final Conference of RILEM TC 253-MCI on Microorganisms and Cementitious Materials Interactions, Davetli Konuşmacı,

Toulouse, Fransa, 2018