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Education Information

Doctorate, Gebze Technical University, Institute Of Science, Turkey 2005 - 2010

Postgraduate, Gebze Technical University, Institute Of Science, Turkey 2002 - 2005

Undergraduate, Kocaeli University, Turkey 1997 - 2002

Dissertations

Doctorate, Novel n-bridged diiron phthalocyanine complexes: Synthesis, characterization and application in oxidation, Gebze Technical University, Institute Of Science, 2010

Research Areas

Material science and engineering, Chemistry, Coordination Chemistry, Organometallics, Catalysis, Engineering and Technology

Academic Titles / Tasks

Professor, Marmara University, Faculty of Technology, Metallurgical and Materials Engineering, 2023 - Continues

Supervised Theses

İşçi Ü., FONKSİYONEL GRUP İÇEREN Mü- NİTRİDO PORFİRİNLER, Doctorate, O.EREN(Student), 2023

İşçi Ü., Monomerik ve dimerik suda çözünen demir ftalosiyanimler, Postgraduate, D.AYDIN(Student), 2022

İşçi Ü., Mü- nitrido porfirinoidler: Sentezi, karakterizasyonu ve uygulamaları, Doctorate, Ç.YÜCEEL(Student), 2022

Published journal articles indexed by SCI, SSCI, and AHCI

1. Alkylthio-tetrasubstituted Lu(III) phthalocyanines: Effect of the substituent bulkiness and length on their photophysical, photochemical, electrochemical and sensing properties

Albakour M., Gümüşgöz Çelik G., Yaseen A. N., Şen Z., DUMOULIN F., Harbeck M., İŞÇİ Ü., Gürek A. G.
Journal of Molecular Structure, vol.1325, 2025 (SCI-Expanded)

- II. **μ -nitrido diiron phthalocyanines: Electron-withdrawing vs electron-donating substituent effect on oxidation reaction catalysis**
Eren O., ŞAHİN Z., DUMOULIN F., İŞÇİ Ü.
Journal of Porphyrins and Phthalocyanines, vol.28, no.11-12, pp.806-813, 2024 (SCI-Expanded)
- III. **Amphiphilic Single-Chain Polymer Nanoparticles as Imaging and Far-Red Photokilling Agents for Photodynamic Therapy in Zebrafish Embryo Xenografts**
Arena D., Nguyen C., Ali L. M. A., Verde-Sesto E., Iturraspe A., Arbe A., İŞÇİ Ü., ŞAHİN Z., DUMOULIN F., Gary-Bobo M., et al.
Advanced Healthcare Materials, vol.13, no.28, 2024 (SCI-Expanded)
- IV. **Synthesis, Photo-Characterizations, and Pre-Clinical Studies on Advanced Cellular and Animal Models of Zinc(II) and Platinum(II) Sulfonyl-Substituted Phthalocyanines for Enhanced Vascular-Targeted Photodynamic Therapy**
Repetowski P., Warszyńska M., KostECKA A., Pucelik B., Barzowska A., EMAMI A., İŞÇİ Ü., DUMOULIN F., Dąbrowski J. M.
ACS Applied Materials and Interfaces, vol.16, no.37, pp.48937-48954, 2024 (SCI-Expanded)
- V. **Nanoencapsulation of a Far-Red Absorbing Phthalocyanine into Poly(benzylmalate) Biopolymers and Modulation of Their Photodynamic Efficiency**
ŞAHİN Z., Önal E., Ali L. M. A., Durand D., EMAMI A., Touré M., İŞÇİ Ü., Gary-Bobo M., Cammas-Marion S., DUMOULIN F.
Biomacromolecules, vol.25, no.6, pp.3261-3270, 2024 (SCI-Expanded)
- VI. **Phthalocyanine vs porphyrin: Experimental and theoretical comparison of the catalytic activity of N-bridged diiron tetrapyrrolic complexes for alcohols oxidation**
ŞAHİN Z., Yüceel Ç., Yildiz D. B., DEDE Y., DUMOULIN F., İŞÇİ Ü.
Molecular Catalysis, vol.559, 2024 (SCI-Expanded)
- VII. **Near infrared-absorbing self-encapsulated phthalocyanine-cored polycaprolactone star polymeric nanoparticles**
Yaseen A. N., Emami A., Aziza H. B., Doganci M. D., İŞÇİ Ü., Gürek A. G., DOĞANCI E., Dumoulin F.
Journal of Porphyrins and Phthalocyanines, vol.28, no.2, pp.107-113, 2024 (SCI-Expanded)
- VIII. **Multifunctional Photovoltaic Window Layers for Solar-Driven Catalytic Conversion of CO₂: The Case of CIGS Solar Cells**
Guerrero J., Bajard E., Schneider N., DUMOULIN F., Lincot D., İŞÇİ Ü., Robert M., Naghavi N.
ACS Energy Letters, vol.8, no.8, pp.3488-3493, 2023 (SCI-Expanded)
- IX. **Comparing PVP and Polymeric Micellar Formulations of a PEGylated Photosensitizing Phthalocyanine by NMR and Optical Techniques**
Gergely L. P., Yüceel Ç., İŞÇİ Ü., Spadin F. S., Schneider L., Spingler B., Frenz M., DUMOULIN F., Vermathen M.
Molecular pharmaceuticals, vol.20, no.8, pp.4165-4183, 2023 (SCI-Expanded)
- X. **Transparent Porous ZnO|Metal Complex Nanostructured Materials: Application to Electrocatalytic CO₂Reduction**
Guerrero J., Schneider N., DUMOULIN F., Lincot D., İŞÇİ Ü., Naghavi N., Robert M.
ACS Applied Nano Materials, vol.6, no.12, pp.10626-10635, 2023 (SCI-Expanded)
- XI. **Phthalocyanines prepared from 4,5-dihexylthiophthalonitrile, a popular building block**
TOPKAYA TAŞKIRAN D., ŞAHİN Z., İŞÇİ Ü., DUMOULIN F.
Turkish Journal of Chemistry, vol.47, no.5, pp.814-836, 2023 (SCI-Expanded)
- XII. **Tetra vs. octa-How it affects the photophysical, photochemical, physicochemical and biological properties of mercaptophenol-substituted Zn phthalocyanines**
TOPKAYA TAŞKIRAN D., Aydın D., Ben Aziza H., ŞAHİN Z., İŞÇİ Ü., Durand D., TAZEYAY U. H., Gary-Bobo M., DUMOULIN F.
JOURNAL OF PORPHYRINS AND PHTHALOCYANINES, vol.26, no.11, pp.701-707, 2022 (SCI-Expanded)
- XIII. **Far-red triplet sensitized Z-to-E photoswitching of azobenzene in bioplastics**

Bharmoria P, Ghasemi S, Edhborg F, Losantos R, Wang Z, Martensson A, Morikawa M, Kimizuka N, Isci Ü, DUMOULIN F., et al.

CHEMICAL SCIENCE, vol.13, no.40, pp.11904-11911, 2022 (SCI-Expanded)

- XIV. **Nanoscaled PAMAM Dendrimer Spacer Improved the Photothermal-Photodynamic Treatment Efficiency of Photosensitizer-Decorated Confeito-Like Gold Nanoparticles for Cancer Therapy**
Saw W. S., Anasamy T., Thu Thi Anh Do T. T. A. D., Lee H. B., Chee C. F., Isci Ü, Misran M., DUMOULIN F., Chong W. Y., Kiew L. V., et al.
MACROMOLECULAR BIOSCIENCE, vol.22, no.8, 2022 (SCI-Expanded)
- XV. **Substituent effect on iron phthalocyanines as cyclohexene oxidation catalysts**
Yüceel Ç., Şahin Z., Işci Ü.
JOURNAL OF PORPHYRINS AND PHTHALOCYANINES, vol.26, no.06N07, pp.452-457, 2022 (SCI-Expanded)
- XVI. **Tuning of organic heterojunction conductivity by the substituents' electronic effects in phthalocyanines for ambipolar gas sensors**
Sahin Z., Meunier-Prest R., DUMOULIN F., Kumar A., Isci Ü, Bouvet M.
SENSORS AND ACTUATORS B-CHEMICAL, vol.332, 2021 (SCI-Expanded)
- XVII. **Alkylthio-tetrasubstituted mu-Nitrido Diiron Phthalocyanines: Spectroelectrochemistry, Electrical Properties, and Heterojunctions for Ammonia Sensing**
Sahin Z., Meunier-Prest R., DUMOULIN F., Isci Ü, Bouvet M.
INORGANIC CHEMISTRY, vol.59, no.2, pp.1057-1067, 2020 (SCI-Expanded)
- XVIII. **Phthalocyanine-based mesoporous organosilica nanoparticles: NIR photodynamic efficiency and siRNA photochemical internalization**
Ekineker G., Nguyen C., Bayir S., Dominguez Gil S, Isci Ü, Daurat M., Godefroy A., Raehm L., Charnay C., Oliviero E., et al.
CHEMICAL COMMUNICATIONS, vol.55, no.77, pp.11619-11622, 2019 (SCI-Expanded)
- XIX. **CO₂ electrochemical catalytic reduction with a highly active cobalt phthalocyanine**
Wang M., Torbensen K., Salvatore D., Ren S., Joulie D., DUMOULIN F., Mendoza D., Lassalle-Kaiser B., Isci Ü, Berlinguette C. P., et al.
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- XX. **Cobalt phthalocyanine-TiO₂ nanocomposites for photocatalytic remediation of textile dyes under visible light irradiation**
Dindas G. B., Sahin Z., Yatmaz H. C., Isci Ü.
JOURNAL OF PORPHYRINS AND PHTHALOCYANINES, vol.23, no.4-5, pp.561-568, 2019 (SCI-Expanded)
- XXI. **A Noble-Metal-Free Heterogeneous Photosensitizer-Relay Catalyst Triad That Catalyzes Water Oxidation under Visible Light**
Ghobadi T. G. U., Yildiz E. A., BÜYÜKTEMİZ M., Akbari S. S., TOPKAYA TAŞKIRAN D., Isci Ü, DEDE Y., YAĞLIOĞLU H. G., Karadas F.
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- XXII. **Triphenylphosphonium-substituted phthalocyanine: Design, synthetic strategy, photoproperties and photodynamic activity**
Tarhouni M., Durand D., Onal E., Aggad D., Isci Ü, Ekineker G., Bregier F., Jamoussi B., Sol V., Gary-Bobo M., et al.
JOURNAL OF PORPHYRINS AND PHTHALOCYANINES, vol.22, no.7, pp.552-561, 2018 (SCI-Expanded)
- XXIII. **Photophysical properties of palladium/platinum tetrasulfonyl phthalocyanines and their application in triplet-triplet annihilation upconversion**
Che Y., Yang W., Tang G., DUMOULIN F., Zhao J., Liu L., Isci Ü.
JOURNAL OF MATERIALS CHEMISTRY C, vol.6, no.21, pp.5785-5793, 2018 (SCI-Expanded)
- XXIV. **Sulfanyl vs sulfonyl, 4,5-vs 3,6-position. How structural variations in phthalonitrile substitution affect their infra-red, crystallographic and Hirshfeld surface analyses**
Onal E., Okyay T. M., Ekineker G., Isci Ü, Ahsen V., Berber S., Zorlu Y., DUMOULIN F.
JOURNAL OF MOLECULAR STRUCTURE, vol.1155, pp.310-319, 2018 (SCI-Expanded)
- XXV. **Cyclotriphosphazene, a scaffold for F-19 MRI contrast agents**
Onal E., Zhang C., Davarci D., Isci Ü, Pilet G., Whittaker A. K., DUMOULIN F.

- TETRAHEDRON LETTERS, vol.59, no.6, pp.521-523, 2018 (SCI-Expanded)
- XXVI. **Synthesis and characterization of a new meso-tetra-dihydro benzocyclobutacenaphthylene free-base porphyrin**
Isci Ü., Topal S. Z., Onal E., Fidan I., Berber S., Ahsen V., Parejo C., Sastre-Santos A., DUMOULIN F.
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- XXVII. **Subtle variations of the behavior of a silylated tetraethylene glycol-substituted Zn phthalocyanine towards acids**
Onal E., Topal S. Z., Tarhouni M., Isci Ü., Bassem J., Ahsen V., DUMOULIN F.
JOURNAL OF PORPHYRINS AND PHTHALOCYANINES, vol.20, no.8-11, pp.1182-1189, 2016 (SCI-Expanded)
- XXVIII. **Covalent or supramolecular combinations of resorcinarenes and porphyrinoids**
DUMOULIN F., TOPKAYA TAŞKIRAN D., Yasar S., Ahsen V., Isci Ü.
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- XXIX. **Methylsulfonyl Zn phthalocyanine: A polyvalent and powerful hydrophobic photosensitizer with a wide spectrum of photodynamic applications**
Isci Ü., Beyreis M., Tortik N., Topal S. Z., Glueck M., Ahsen V., DUMOULIN F., Kiesslich T., Plaetzer K.
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- XXX. **A library of dimeric and trimeric phthalonitriles linked by a single aromatic ring: comparative structural and DFT investigations**
Koc M., Zorlu Y., Isci Ü., Berber S., Ahsen V., DUMOULIN F.
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- XXXI. **Synthesis, characterization, and Pb²⁺ ion sensing application of hexa-armed dansyl end-capped poly(epsilon-caprolactone) star polymer with phosphazene core**
Gorur M., DOĞANCI E., Yilmaz F., Isci Ü.
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- XXXII. **1,4,8,11,15,18,22,25-Alkylsulfanyl phthalocyanines: effect of macrocycle distortion on spectroscopic and packing properties**
Zorlu Y., Kumru U., Isci Ü., Divrik B., Jeanneau E., Albrieux F., DEDE Y., Ahsen V., DUMOULIN F.
CHEMICAL COMMUNICATIONS, vol.51, no.30, pp.6580-6583, 2015 (SCI-Expanded)
- XXXIII. **Fluorescent mono- and tetra-dansylated cavitands: synthesis and acid sensitivity**
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- XXXIV. **Site-selective formation of an iron(IV)-oxo species at the more electron-rich iron atom of heteroleptic mu-nitrido diiron phthalocyanines**
Isci Ü., Faponle A. S., Afanasiev P., Albrieux F., Briois V., Ahsen V., DUMOULIN F., Sorokin A. B., de Visser S. P.
CHEMICAL SCIENCE, vol.6, no.8, pp.5063-5075, 2015 (SCI-Expanded)
- XXXV. **Resorcinarene-mono-benzimidazolium salts as NHC ligands for Suzuki-Miyaura cross-couplings catalysts**
Isci Ü., AYGÜN M., SEVİNÇEK R., Zorlu Y., DUMOULIN F.
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- XXXVI. **Dihydroxylated Alkylsulfanyl Phthalonitriles**
Zorlu Y., Taskiran D. T., Tarakci D. K., Kumru U., Alpugan S., Isci Ü., DUMOULIN F., Ahsen V.
JOURNAL OF CHEMICAL CRYSTALLOGRAPHY, vol.44, no.7, pp.337-345, 2014 (SCI-Expanded)
- XXXVII. **Axial binding and host-guest interactions of a phthalocyanine resorcinarene cavitand hybrid**
TOPKAYA TAŞKIRAN D., DUMOULIN F., Ahsen V., Isci Ü.
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- XXXVIII. **Expeditious selective access to functionalized platforms of A(7)B-type heteroleptic lanthanide double-decker complexes of phthalocyanine**
Alpugan S., Isci Ü., Albrieux F., Hirel C., Gurek A. G., Bretonniere Y., Ahsen V., DUMOULIN F.
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- XXXIX. **N-bridged dimers of tetrapyrroles complexed by transition metals: syntheses, characterization methods, and uses as oxidation catalysts**

Isci Ü., DUMOULIN F., Sorokin A. B., Ahsen V.

TURKISH JOURNAL OF CHEMISTRY, vol.38, no.6, pp.923-949, 2014 (SCI-Expanded)

- XL. **Modulation of the electronic and spectroscopic properties of Zn(II) phthalocyanines by their substitution pattern**
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- XLl. **Sulfonamide-substituted iron phthalocyanine: design, solubility range, stability and oxidation of olefins**
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- XLII. **Comparative structural analysis of 4,5-and 3,6-dialkylsulfanylphthalonitriles of different bulkiness**
Zorlu Y., Isci Ü., Un I., Kumru U., DUMOULIN F., Ahsen V.
STRUCTURAL CHEMISTRY, vol.24, no.4, pp.1027-1038, 2013 (SCI-Expanded)
- XLIII. **Preparation of N-bridged diiron phthalocyanines bearing bulky or small electron-withdrawing substituents**
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- XLIV. **Preparation of iron phthalocyanine complex bearing four tetraazamacrocycles as a precursor for oxidation catalyst with two catalytic sites**
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JOURNAL OF PORPHYRINS AND PHTHALOCYANINES, vol.13, no.6, pp.747-752, 2009 (SCI-Expanded)
- XLV. **A first ABAC phthalocyanine**
DUMOULIN F., Zorlu Y., Ayhan M. M., Hirel C., Isci Ü., Ahsen V.
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- XLVI. **Preparation and characterization of mu-nitrido diiron phthalocyanines with electron-withdrawing substituents: application for catalytic aromatic oxidation**
Isci Ü., Afanasiev P., Millet J. M., Kudrik E. V., Ahsen V., Sorokin A. B.
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Articles Published in Other Journals

- I. **Topology effects in photodynamic therapy with phthalocyanine nanocarriers**
Arena D., İŞÇİ Ü., Onofre M., Nguyen C., ŞAHİN Z., Verde-Sesto E., Iturrospe A., Arbe A., Gary-Bobo M., Pomposo J. A., et al.
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Books

- I. **Phthalocyanines and Porphyrazines**
İŞÇİ Ü., DUMOULIN İSÇİ F. A. C.
in: Fundamentals of Porphyrin Chemistry: A 21st Century Approach, Penelope J. Brothers (Editor), Mathias O. Senge (Editor), Editor, WILEY, pp.241-302, 2022

Supported Projects

İşci Ü., Gürek A. G., Dumoulin İsci F. A. C., TÜBİTAK International Bilateral Joint Cooperation Program Project, PDT, PTT ya da Işıkla Tetiklenen İlaç Salınımı İçin Tasarlanmış ve Kendiliğinden Düzenlenerek Ortogonal Fonksiyonlanabilen Karışık ya da Saf Ftaloazolmaları Oluşturabilen Amfifilik Ftalosiyanimler, 2020 - 2023

İşci Ü., TUBİTAK Project, CO₂'nin İndirgenmesi İçin Pacman Ftalosiyanın Dimerler, 2021 - 2022

İşci Ü., TUBİTAK Project, Mü-Nitrido Nonhem/Ftalosiyanın Demir Kompleks Katalizli C-H Bağı Aktivasyonu, 2018 - 2021

İşci Ü., TÜBİTAK International Bilateral Joint Cooperation Program Project, Düzenlenebilen Elektronik Özelliklere Sahip Çözünür Ftalosiyanınlar Kullanılarak Ayarlanabilen Arayüzeyler Ve Modifiye Elektrotlar İle Heteroeklemlerin Optimizasyonu, 2018 - 2020

İşci Ü., Ahsen V., TÜBİTAK International Bilateral Joint Cooperation Program Project, Ftalosiyanın Bazlı Periyodik Mezoporöz Organosilikon Nanopartiküller, 2016 - 2018

İşci Ü., Topkaya Taşkıran D., İnce Ocakoğlu M., TÜBİTAK - AB COST Project, Süpramoleküler Konuk konak Etkileşimleri ile Fulleren Zn Tetrapirrol Arasındaki Enerji ve Elektron Transferinin Optimizasyonu, 2014 - 2018

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