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Personal Information

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Education Information

Doctorate, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, Turkey 1979 - 1983

Post Graduate, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, Turkey 1976 - 1979

Under Graduate, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, Turkey 1971 - 1976

Dissertations

Doctorate, Radiation-induced and electroinitiated polymerization of same epoxy monomers, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, 1983

Post Graduate, Dehydration of Calcium Sulphate Dihydrate in Aqueous Medium, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, 1979

Research Areas

Chemistry, Physical Chemistry, Electrochemistry, Characterization of Polymers, Polymeric Materials, Natural Sciences

Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, 2011 - Continues

Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Chemistry, 1992 - Continues

Advising Theses

ÖNAL A. M. , VOLKAN M., Electrochemical detection of dopamine in the presence of excess ascorbic acid using glassy carbon electrodes modified with conducting polymers, Post Graduate, S.ŞANLI(Student), 2018

ÖNAL A. M. , Development of Ru₀/MO₂ (M = Ti, Zr, Hf, Ce) catalysts for electrocatalytic hydrogen production from water splitting, Post Graduate, E.DEMİR(Student), 2017

ÖNAL A. M. , Synthesis and electropolymerization of new hybrid monomers containing carbazole units, Post Graduate, M.AKBAYRAK(Student), 2016

ÖNAL A. M. , Effect of ring size on benzimidazole acceptor unit on the properties of donor-acceptor-donor type monomers and their electrochromic polymers, Doctorate, E.GÜL(Student), 2015

ÖNAL A. M. , Synthesis of new multifunctional polyfluorene and donor acceptor type polyfluorene derivatives, Doctorate, B.ÇARBAŞ(Student), 2013

ÖNAL A. M. , Synthesis of heterocyclic unit substituted carbazole derivatives and their electrochemical polymerization, Post Graduate, H.ESRA(Student), 2013

ÖNAL A. M. , Synthesis and Characterization of New Conducting Polymer- Nano Particle Composites, Post Graduate, E.EROĞLU(Student), 2013

ÖNAL A. M. , Synthesis of new multifunctional polyfluorene & donor acceptor type polyfluorene derivatives, Doctorate, B.Bezgin(Student), 2012

ÖNAL A. M. , Synthesis of a novel series of furan and fluorene containing monomers and their polymers, Post Graduate, A.GÜNEŞ(Student), 2011

ÖNAL A. M. , Color engineering of π -conjugated donor-acceptor systems: The role of donor and acceptor units on the neutral state color, Doctorate, M.İÇLİ(Student), 2011

ÖNAL A. M. , Önal A., Soluble Alkyl Substituted Poly(3,4Propylenedioxyselephene)s : a novel platform for Optoelectronic materials, Post Graduate, S.Atak(Student), 2011

ÖNAL A. M. , Önal A., Color engineering of π -conjugated donor-acceptor systems :, Doctorate, M.İçli(Student), 2011

ÖNAL A. M. , Design, synthesis and electropolymerization of a new chemiluminescent terthienyl system, Post Graduate, N.Atılgan(Student), 2008

ÖNAL A. M. , A glow in the dark: Synthesis and electropolymerization of chemiluminescent thiophene derivatives, Post Graduate, D.ASİL(Student), 2008

ÖNAL A. M. , Design, synthesis and electropolymerization of a new chemiluminescent terthienyl system, Post Graduate, N.ATILGAN(Student), 2008

ÖNAL A. M. , Synthesis, characterization, and polymerization of polyether bridged thiophene and aniline derivatives, Doctorate, S.TİRKEŞ(Student), 2008

ÖNAL A. M. , Electrochemical synthesis of crowned conducting polymers : nature of radical cations in polymerization and mechanism of conductivity, Doctorate, A.Cihaner(Student), 2004

ÖNAL A. M. , Electrochemical synthesis of crowned conducting polymers: Nature of radical cations in polymerization and mechanism of conductivity, Doctorate, A.CİHANER(Student), 2004

ÖNAL A. M. , Electrochemical polymerization of 2-aminofluorene, fluorene, and 9-fluorenone, Post Graduate, T.İMAMOĞLU(Student), 2003

ÖNAL A. M. , Electrochemical polymerization of aminofluorene, fluorene, and fluorenone, Post Graduate, T.İmamoğlu(Student), 2003

ÖNAL A. M. , Spectroelectrochemical investigations of pyrimidine-2-thionato-bridged binuclear platinum (III) complexes, Post Graduate, Ö.ÖZBEK(Student), 2002

ÖNAL A. M. , Chemical and electrochemical polymerization of halogenated anilines, Post Graduate, A.CİHANER(Student), 2000

ÖNAL A. M. , Anionic polymerization of styrene oxide, Post Graduate, H.GÜLER(Student), 2000

ÖNAL A. M. , Electrochemical synthesis of some conducting polymers and investigations of their conduction mechanism ESR technique, Post Graduate, B.DEMİRBOĞA(Student), 1998

ÖNAL A. M. , Polymerization of styrene oxide by using nickel ethyl xanthate as an initiator, Doctorate, N.Kayatürk(Student), 1996

ÖNAL A. M. , Polymerization of styrene oxide by using nickel ethyl xanthate as an initiate, Doctorate, N.KAYATÜRK(Student), 1996

ÖNAL A. M. , Electrochemical behaviour of some metal complexes containing sulphur ligands, Post Graduate, Ş.ÖZALP(Student), 1993

ÖNAL A. M. , Polymerization of allylbenzene., Post Graduate, K.SOUSY(Student), 1988

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

- I. **Effect of the donor units on the properties of fluorinated acceptor based systems**
Çakal D., Akdağ A., Cihaner A., Önal A. M.
Dyes and Pigments, vol.185, 2021 (Journal Indexed in SCI)
- II. **High Durability and Electrocatalytic Activity Toward Hydrogen Evolution Reaction with Ultralow Rhodium Loading on Titania**
AKBAYRAK M., ÖNAL A. M.

JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.167, no.15, 2020 (Journal Indexed in SCI)

- III. **Effect of fluorine substituted benzothiadiazole on electro-optical properties of donor-acceptor-donor type monomers and their polymers**
ÇAKAL D., Ercan Y. E. , ÖNAL A. M. , CİHANER A.
DYES AND PIGMENTS, vol.182, 2020 (Journal Indexed in SCI)
- IV. **Binder- free iridium based electrocatalysts: Facile preparation, high activity and outstanding stability for hydrogen evolution reaction in acidic medium**
Akbayrak M., Önal A. M.
Journal Of Colloid And Interface Science, vol.580, pp.11-20, 2020 (Journal Indexed in SCI)
- V. **Ceria Supported Nickel(0) Nanoparticles: A Highly Active and Low Cost Electrocatalyst for Hydrogen Evolution Reaction**
DEMİR ARABACI E., ÖNAL A. M. , ÖZKAR S.
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.167, no.10, 2020 (Journal Indexed in SCI)
- VI. **Cross-exchange of donor units in donor-acceptor-donor type conjugated molecules: Effect of symmetrical and unsymmetrical linkage on the electrochemical and optical properties**
Eroglu D., ERGÜN E. G. C. , ÖNAL A. M.
TETRAHEDRON, vol.76, no.19, 2020 (Journal Indexed in SCI)
- VII. **Synthesis and electropolymerization of thieno[3,4-c]pyrrole-4,6-dione based donor-acceptor-donor type monomers**
ÇAKAL D., CİHANER A., ÖNAL A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.862, 2020 (Journal Indexed in SCI)
- VIII. **Efficient Ceria-Supported Rhodium Nanoparticles as an Electrocatalyst for Hydrogen Evolution**
AKBAYRAK M., ÖNAL A. M.
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.166, no.16, 2019 (Journal Indexed in SCI)
- IX. **Nanowires assembled from iron manganite nanoparticles: Synthesis, characterization, and investigation of electrocatalytic properties for water oxidation reaction**
Çetin A., Önal A. M. , Esenturk E.
Journal of Materials Research, vol.34, pp.3231-3239, 2019 (Journal Indexed in SCI)
- X. **Investigation of Fluorine Atom Effect on Benzothiadiazole Acceptor Unit in Donor Acceptor Donor Systems**
Çakal D., Boztas Y., Akdağ A., Önal A. M.
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.166, 2019 (Journal Indexed in SCI)
- XI. **Chromium substituted iron oxide nanowires as affordable electrocatalysts for oxygen evolution reaction**
Kocabas S., Çetin A., Önal A. M. , Esenturk E.
JOURNAL OF NANOPARTICLE RESEARCH, vol.21, 2019 (Journal Indexed in SCI)
- XII. **Magnesium substituted cobalt spinel nanostructures for electrocatalytic water oxidation**
Ekebas E., Çetin A., Önal A. M. , Nalbant Esentürk E.
JOURNAL OF APPLIED ELECTROCHEMISTRY, vol.49, pp.315-325, 2019 (Journal Indexed in SCI)
- XIII. **Electrochemical and optical properties of substituted phthalimide based monomers and electrochemical polymerization of 3,4-ethylenedioxythiophene-polyhedral oligomeric silsesquioxane (POSS) analogue**
Çakal D., Ertan S., Cihaner A., Önal A. M.
DYES AND PIGMENTS, vol.161, pp.411-418, 2019 (Journal Indexed in SCI)
- XIV. **Ceria supported ruthenium(0) nanoparticles: Highly efficient catalysts in oxygen evolution reaction**
DEMİR ARABACI E., AKBAYRAK S., ÖNAL A. M. , ÖZKAR S.
JOURNAL OF COLLOID AND INTERFACE SCIENCE, vol.534, pp.704-710, 2019 (Journal Indexed in SCI)
- XV. **Titania, zirconia and hafnia supported ruthenium(0) nanoparticles: Highly active hydrogen evolution catalysts**
DEMİR ARABACI E., AKBAYRAK S., ÖNAL A. M. , ÖZKAR S.
JOURNAL OF COLLOID AND INTERFACE SCIENCE, vol.531, pp.570-577, 2018 (Journal Indexed in SCI)

- XVI. **Synthesis and electrochemical polymerization of D-A-D type monomers with thieno [3,4-c] pyrrole-4,6-dione acceptor unit**
Çakal D., Ertan S., Cihaner A., Önal A. M.
DYES AND PIGMENTS, vol.158, pp.175-182, 2018 (Journal Indexed in SCI)
- XVII. **Electrochemical and optical properties of dicyclohexylmethyl substituted poly(3,4-propylenedioxythiophene) analogue**
Çakal D., Cihaner A., Önal A. M.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.135, 2018 (Journal Indexed in SCI)
- XVIII. **Carbazole based electrochromic polymers bearing ethylenedioxy and propylenedioxy scaffolds**
ERGÜN E. G. C. , ÖNAL A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.815, pp.158-165, 2018 (Journal Indexed in SCI)
- XIX. **Nanoceria-Supported Ruthenium(0) Nanoparticles: Highly Active and Stable Catalysts for Hydrogen Evolution from Water**
DEMİR ARABACI E., Akbayrak S., ÖNAL A. M. , AKBAYRAK S.
ACS APPLIED MATERIALS & INTERFACES, vol.10, no.7, pp.6299-6308, 2018 (Journal Indexed in SCI)
- XX. **NEW EDOT CONTAINING POLYMERS: EFFECT OF RING SIZE ON THE BENZIMIDAZOLE ACCEPTOR**
Cansu-Ergun E. G. , ÖNAL A. M. , CİHANER A.
ELECTROCHIMICA ACTA, vol.188, pp.165-174, 2016 (Journal Indexed in SCI)
- XXI. **Propylenedioxy and Benzimidazole Based Electrochromic Polymers**
Cansu-Ergun E. G. , ÖNAL A. M. , CİHANER A.
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.163, no.5, 2016 (Journal Indexed in SCI)
- XXII. **Synthesis and Electrochemical Polymerization of Dithienosilole-Based Monomers Bearing Different Donor Units**
Eken S., Ergun E. G. C. , ÖNAL A. M.
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.163, no.6, 2016 (Journal Indexed in SCI)
- XXIII. **Synthesis and electrochemical polymerization of diketopyrrolopyrrole based donor-acceptor-donor monomers containing 3,6-and 2,7-linked carbazoles**
Akbayrak M., Önal A. M.
POLYMER CHEMISTRY, vol.7, pp.6110-6119, 2016 (Journal Indexed in SCI)
- XXIV. **Synthesis and electro-optical properties of a new copolymer based on EDOT and carbazole**
AKBAYRAK M., ERGÜN E. G. C. , ÖNAL A. M.
DESIGNED MONOMERS AND POLYMERS, vol.19, no.7, pp.679-687, 2016 (Journal Indexed in SCI)
- XXV. **Electrochemical synthesis of new conjugated polymers based on carbazole and furan units**
Oguzturk H. E. , TİRKEŞ S. , ÖNAL A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.750, pp.1-8, 2015 (Journal Indexed in SCI)
- XXVI. **Electrochemical polymerization of a new low-voltage oxidized thienylenepyrrole-derivative and its electrochromic device application**
Carbas B. B. , KIVRAK A., TEKE E., ZORA M., ÖNAL A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.729, pp.15-20, 2014 (Journal Indexed in SCI)
- XXVII. **Spectroelectrochemical investigations of pyrimidine-2-thionato-bridged binuclear platinum(III) complexes**
Ozbek O., ÖZALP YAMAN Ş., ÖZKAN İ., ÖNAL A. M. , İŞÇİ H.
POLYHEDRON, vol.74, pp.122-128, 2014 (Journal Indexed in SCI)
- XXVIII. **A new blue light emitting and electrochromic polyfluorene derivative for display applications**
Carbas B. B. , Asil D., Friend R. H. , ÖNAL A. M.
ORGANIC ELECTRONICS, vol.15, no.2, pp.500-508, 2014 (Journal Indexed in SCI)
- XXIX. **Synthesis of New Thienylene Pyrrole Monomers and Their Electropolymerizations**
Eken S., Carbas B. B. , AKDAĞ A., ÖNAL A. M.
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.161, no.14, 2014 (Journal Indexed in SCI)
- XXX. **Electrochemical Behavior of Hydrazine Borane in Methanol Solution**
Ozhava D., ÖNAL A. M. , ÖZKAR S.

- JOURNAL OF THE ELECTROCHEMICAL SOCIETY, vol.161, no.12, 2014 (Journal Indexed in SCI)
- XXXI. **Optical and Electronic Properties of Fluorene-Based Copolymers and Their Sensory Applications**
Ibrahimova V., Kocak M. E. , ÖNAL A. M. , TUNCEL D.
JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY, vol.51, no.4, pp.815-823, 2013 (Journal Indexed in SCI)
- XXXII. **Synthesis and electro-optical properties of new conjugated hybrid polymers based on furan and fluorene units**
Gunes A., CİHANER A., ÖNAL A. M.
ELECTROCHIMICA ACTA, vol.89, pp.339-345, 2013 (Journal Indexed in SCI)
- XXXIII. **Furan and benzochalcogenodiazole based multichromic polymers via a donor-acceptor approach**
İçli Özkut M., İPEK H., Karabay B., CİHANER A., ÖNAL A. M.
POLYMER CHEMISTRY, vol.4, no.8, pp.2457-2463, 2013 (Journal Indexed in SCI)
- XXXIV. **Synthesis and electropolymerization of an ion sensing and fluorescent fluorene derivative bearing a quinoxaline moiety and its analogues with different donor units**
KIVRAK A., Carbas B. B. , ZORA M., ÖNAL A. M.
REACTIVE & FUNCTIONAL POLYMERS, vol.72, no.9, pp.613-620, 2012 (Journal Indexed in SCI)
- XXXV. **Synthesis and electropolymerization of a new ion sensitive ethylenedioxy-substituted terthiophene monomer bearing a quinoxaline moiety**
Carbas B. B. , Kivrak A., ZORA M., ÖNAL A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.677, pp.9-14, 2012 (Journal Indexed in SCI)
- XXXVI. **New fluorene-xanthene-based hybrid electrochromic and fluorescent polymers via donor-acceptor approach**
Carbas B. B. , ÖNAL A. M.
ELECTROCHIMICA ACTA, vol.66, pp.38-44, 2012 (Journal Indexed in SCI)
- XXXVII. **Substituent and heteroatom effects on the electrochromic properties of similar systems**
Icli-Ozkut M., Mersini J., ÖNAL A. M. , CİHANER A.
JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY, vol.50, no.4, pp.615-621, 2012 (Journal Indexed in SCI)
- XXXVIII. **Members of CMY Color Space: Cyan and Magenta Colored Polymers Based on Oxadiazole Acceptor Unit**
Ozkut M. I. , Algi M. P. , Oztas Z., Algi F., ÖNAL A. M. , CİHANER A.
MACROMOLECULES, vol.45, no.2, pp.729-734, 2012 (Journal Indexed in SCI)
- XXXIX. **Donor-acceptor polymer electrochromes with cyan color: Effect of alkyl chain length on doping processes**
Celikbilek O., Icli-Ozkut M., Algi F., ÖNAL A. M. , CİHANER A.
ORGANIC ELECTRONICS, vol.13, no.1, pp.206-213, 2012 (Journal Indexed in SCI)
- XL. **A new processable electrochromic polymer based on an electron deficient fluorene derivative with a high coloration efficiency**
Carbas B. B. , Kivrak A., ÖNAL A. M.
ELECTROCHIMICA ACTA, vol.58, pp.223-230, 2011 (Journal Indexed in SCI)
- XLI. **Electropolymerization of a New 4-(2,5-Di-2-thiophen-2-yl-pyrrol-1-yl)-Tetra Substituted Nickel Phthalocyanine Derivative**
Yavuz A., Carbas B. B. , Aras L., ÖNAL A. M.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.122, no.2, pp.1293-1299, 2011 (Journal Indexed in SCI)
- XLII. **Soluble Alkyl Substituted Poly(3,4-Propylenedioxy-selenophene)s: A New Platform For Optoelectronic Materials**
Atak S., Icli-Ozkut M., ÖNAL A. M. , CİHANER A.
JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY, vol.49, no.20, pp.4398-4405, 2011 (Journal Indexed in SCI)
- XLIII. **Synthesis of a novel fluorescent and ion sensitive monomer bearing quinoxaline moieties and its electropolymerization**

- Carbas B. B. , KIVRAK A., ZORA M., ÖNAL A. M.
REACTIVE & FUNCTIONAL POLYMERS, vol.71, no.5, pp.579-587, 2011 (Journal Indexed in SCI)
- XLIV. **A blue to highly transmissive soluble electrochromic polymer based on poly(3,4-propylenedioxysephenone) with a high stability and coloration efficiency**
Ozkut M. I. , Atak S., ÖNAL A. M. , CİHANER A.
JOURNAL OF MATERIALS CHEMISTRY, vol.21, no.14, pp.5268-5272, 2011 (Journal Indexed in SCI)
- XLV. **Donor-Acceptor Polymer Electrochromes with Tunable Colors and Performance**
Icli M., Pamuk M., Algi F., ÖNAL A. M. , CİHANER A.
CHEMISTRY OF MATERIALS, vol.22, no.13, pp.4034-4044, 2010 (Journal Indexed in SCI)
- XLVI. **A new soluble neutral state black electrochromic copolymer via a donor-acceptor approach**
Icli M., Pamuk M., Algi F., ÖNAL A. M. , CİHANER A.
ORGANIC ELECTRONICS, vol.11, no.7, pp.1255-1260, 2010 (Journal Indexed in SCI)
- XLVII. **Electrochemical copolymerization and characterization of dianilines linked by polyether bridge with aniline**
TİRKEŞ S., ÖNAL A. M.
JOURNAL OF APPLIED ELECTROCHEMISTRY, vol.40, no.4, pp.865-873, 2010 (Journal Indexed in SCI)
- XLVIII. **Electrochromic performance and ion sensitivity of a terthienyl based fluorescent polymer**
Atilgan N., CİHANER A., ÖNAL A. M.
REACTIVE & FUNCTIONAL POLYMERS, vol.70, no.4, pp.244-250, 2010 (Journal Indexed in SCI)
- XLIX. **Synthesis and electropolymerization of the phthacyanines with 4-(2,5-di-2-thiophen-2-yl-pyrrol-1-yl) substituents**
Yavuz A., Bezgin B., Aras L., ÖNAL A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.639, pp.116-122, 2010 (Journal Indexed in SCI)
- L. **Electrochemical polymerization of an electron deficient fluorene derivative bearing ethylenedioxythiophene side groups**
Bezgin B., ÖNAL A. M.
ELECTROCHIMICA ACTA, vol.55, no.3, pp.779-784, 2010 (Journal Indexed in SCI)
- LI. **Synthesis and Characterization of a New Conducting Polymer Based on 4-(2,5-di-2-thiophen-2-yl-pyrrol-1-yl)-phthalonitrile**
Yavuz A., Bezgin B., ÖNAL A. M.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.114, no.5, pp.2685-2690, 2009 (Journal Indexed in SCI)
- LII. **Electropolymerization and ion sensitivity of chemiluminescent thienyl systems**
ASİL ALPTEKİN D., CİHANER A., ÖNAL A. M.
ELECTROCHIMICA ACTA, vol.54, no.26, pp.6740-6746, 2009 (Journal Indexed in SCI)
- LIII. **Synthesis and properties of a novel redox driven chemiluminescent material built on a terthienyl system**
Atilgan N., Algi F., ÖNAL A. M. , CİHANER A.
TETRAHEDRON, vol.65, pp.5776-5781, 2009 (Journal Indexed in SCI)
- LIV. **Electrochemical co-polymerization of a novel fluorene derivative with 3,4-ethylenedioxythiophene**
Bezgin B., Yagan A., ÖNAL A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.632, pp.143-148, 2009 (Journal Indexed in SCI)
- LV. **Template-free microsphere and hollow sphere formation of polymethylanilines**
Icli M., ÖNAL A. M. , CİHANER A.
POLYMER INTERNATIONAL, vol.58, no.6, pp.674-679, 2009 (Journal Indexed in SCI)
- LVI. **A glow in the dark: synthesis and electropolymerization of a novel chemiluminescent terthienyl system**
ASİL ALPTEKİN D., CİHANER A., ÖNAL A. M.
CHEMICAL COMMUNICATIONS, no.3, pp.307-309, 2009 (Journal Indexed in SCI)
- LVII. **Electrochemical polymerization of 9-fluorencarboxylic acid and its electrochromic device application**
Bezgin B., CİHANER A., ÖNAL A. M.

THIN SOLID FILMS, vol.516, no.21, pp.7329-7334, 2008 (Journal Indexed in SCI)

- LVIII. **A novel conducting polymer based on terthienyl system bearing strong electron-withdrawing substituents and its electrochromic device application**
ASİL ALPTEKİN D., CİHANER A., ALGI F., ÖNAL A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.618, pp.87-93, 2008 (Journal Indexed in SCI)
- LIX. **Impedance spectroscopy of N-substituted oligo-oxyethylene polypyrrole films**
CİHANER A., ÖNAL A. M.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.108, no.4, pp.2373-2378, 2008 (Journal Indexed in SCI)
- LX. **Synthesis of N-polyetheral polypyrroles and their application for the preconcentration of rare earth ions**
Koksel B., CİHANER A., Kaya M., Volkan M., ÖNAL A. M.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.108, no.4, pp.2707-2711, 2008 (Journal Indexed in SCI)
- LXI. **A fast switching, low band gap, p- and n-dopable, donor-acceptor type polymer**
Gunbas G. E. , ÇAMURLU P., Akhmedov I. M. , TANYELİ C., ÖNAL A. M. , Toppare L.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.615, no.1, pp.75-83, 2008 (Journal Indexed in SCI)
- LXII. **Electrochemical synthesis of poly(3-bromo-4-methoxythiophene) and its device application**
CİHANER A., Onal A. M.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.601, pp.68-76, 2007 (Journal Indexed in SCI)
- LXIII. **Investigation of the effect of dopant on characteristics of poly(3-methyl thiophene) via pyrolysis mass spectrometry**
Gözet T., Önal A. M. , Hacaloğlu J.
Journal of Macromolecular Science, Part A: Pure and Applied Chemistry, vol.44, pp.259-263, 2007 (Journal Indexed in SCI)
- LXIV. **Electrosynthesis of polyfuran in acetonitrile-boron trifluoride-ethyl ether mixture and its device application**
Tirkes S., Onal A. M.
JOURNAL OF APPLIED POLYMER SCIENCE, vol.103, no.2, pp.871-876, 2007 (Journal Indexed in SCI)
- LXV. **Synthesis and electrochemistry of Group 6 tetracarbonyl (N,N'-bis(ferrocenylmethylene)ethylenediamine)metal(0) complexes**
Kocak F. S. , Kavaklı C., Akyol C., Onal A. M. , Ozkar S.
JOURNAL OF ORGANOMETALLIC CHEMISTRY, vol.691, no.23, pp.5030-5037, 2006 (Journal Indexed in SCI)
- LXVI. **Electrochemical copolymerization of thiophene containing pseudo-polyether cages with pyrrole**
Cihaner A., Onal A. M.
TURKISH JOURNAL OF CHEMISTRY, vol.30, no.5, pp.629-634, 2006 (Journal Indexed in SCI)
- LXVII. **Electrochemical polymerization of para-substituted haloanilines**
Cihaner A., Onal A.
JOURNAL OF MACROMOLECULAR SCIENCE-PURE AND APPLIED CHEMISTRY, no.1, pp.153-163, 2006 (Journal Indexed in SCI)
- LXVIII. **Electrochemistry of nickel(II) complexes with N,N'-bis(3,5-di-tert-butylsalicylidene)polymethylenediamines**
Ozalp-Yaman S., Kasumov V., Onal A.
POLYHEDRON, vol.24, no.14, pp.1821-1828, 2005 (Journal Indexed in SCI)
- LXIX. **Pyrolysis mass spectrometry analysis of electrochemically grafted polyacrylonitrile with thiophene**
Oguz G., HACALOĞLU J., ÖNAL A. M.
Journal of Macromolecular Science - Pure and Applied Chemistry, no.10, pp.1387-1397, 2005 (Journal Indexed in SCI)
- LXX. **Electrochemical copolymerization of 2-substituted thiophene derivative linked by polyether bridge with thiophene**
Cihaner A., Onal A.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.583, no.1, pp.104-108, 2005 (Journal Indexed in SCI)
- LXXI. **Synthesis of a regular polymer containing pseudo-polyether cages**

- Cihaner A., Onal A.
SYNTHETIC METALS, vol.150, no.1, pp.39-45, 2005 (Journal Indexed in SCI)
- LXXII. **Synthesis and polymerization of 2-and 3-substituted thiophene derivatives linked by polyether bridges**
Tirkas S., Cihaner A., Onal A.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.573, no.1, pp.189-196, 2004 (Journal Indexed in SCI)
- LXXIII. **Spectroelectrochemical investigation of the anodic oxidation of dibenzo-18-crown-6**
Cihaner A., Onal A.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.571, no.2, pp.159-167, 2004 (Journal Indexed in SCI)
- LXXIV. **Electrochemical polymerisation of 2-aminofluorene in ethylalcohol/water medium**
Imamoglu T., Onal A.
EUROPEAN POLYMER JOURNAL, vol.40, no.8, pp.1875-1880, 2004 (Journal Indexed in SCI)
- LXXV. **Electrochemical polymerization of 9-fluorenone**
Cihaner A., Tirkas S., Onal A.
JOURNAL OF ELECTROANALYTICAL CHEMISTRY, vol.568, pp.151-156, 2004 (Journal Indexed in SCI)
- LXXVI. **Pyrolysis mass spectrometry analysis of BF₄ - doped polythiophene**
Gozet T., HACALOĞLU J., ÖNAL A. M.
Journal of Macromolecular Science - Pure and Applied Chemistry, no.6, pp.713-725, 2004 (Journal Indexed in SCI)
- LXXVII. **Electrical, optical and photoconductive properties of poly(dibenzo-18-crown-6)**
Qasrawi A., Cihaner A., Onal A.
CRYSTAL RESEARCH AND TECHNOLOGY, vol.39, no.1, pp.56-62, 2004 (Journal Indexed in SCI)
- LXXVIII. **Electrochemical and quantum chemical studies on mitomycin and adriamycin**
Ozalp-Yaman S., Onal A., Turker L.
JOURNAL OF MOLECULAR STRUCTURE, vol.654, pp.81-93, 2003 (Journal Indexed in SCI)
- LXXIX. **Electrochemistry of acetate-, carbonate-, sulfate-, and dihydrogenphosphate-bridged dirhodium(II) complexes**
Yaman S., Onal A., Isci H.
ZEITSCHRIFT FUR NATURFORSCHUNG SECTION B-A JOURNAL OF CHEMICAL SCIENCES, vol.58, no.6, pp.563-570, 2003 (Journal Indexed in SCI)
- LXXX. **Characterization of BF₄- doped polythiophene via pyrolysis mass spectrometry**
Gozet T., ÖNAL A. M., HACALOĞLU J.
Synthetic Metals, pp.453-454, 2003 (Journal Indexed in SCI)
- LXXXI. **Electrochemical behaviour and electrochemical polymerization of fluoro-substituted anilines**
Cihaner A., Onal A.
POLYMER INTERNATIONAL, vol.51, no.8, pp.680-686, 2002 (Journal Indexed in SCI)
- LXXXII. **Low-temperature spectroelectrochemistry of tetraethylammonium tris(ethylxanthato)nickelate(II) and bis(ethylxanthato)nickel(II) complexes**
Onal A., Isci H., Yaman S.
INORGANIC REACTION MECHANISMS, vol.4, pp.133-139, 2002 (Journal Indexed in SCI)
- LXXXIII. **Spectroelectrochemical investigation of pentacarbonyl(pyrazine)metal(0) (metal = Cr, Mo, W) complexes of group 6 elements**
Yaman S., Esenturk E., Kayran C., Onal A.
ZEITSCHRIFT FUR NATURFORSCHUNG SECTION B-A JOURNAL OF CHEMICAL SCIENCES, vol.57, no.1, pp.92-98, 2002 (Journal Indexed in SCI)
- LXXXIV. **Spectroelectrochemistry of potassium ethylxanthate, bis(ethylxanthato)nickel(II) and tetraethylammonium tris(ethylxanthato)nickelate(II)**
Dag O., Yaman S., Onal A., Isci H.
JOURNAL OF THE CHEMICAL SOCIETY-DALTON TRANSACTIONS, no.19, pp.2819-2824, 2001 (Journal Indexed in SCI)
- LXXXV. **Electrochemical polymerisation of (2, 4,6-trihalophenolato) nickel(II) complexes in solution**
Aydeniz K., Onal A., Kisakurek D.

- EUROPEAN POLYMER JOURNAL, vol.37, no.10, pp.2017-2023, 2001 (Journal Indexed in SCI)
- LXXXVI. **Synthesis and characterization of fluorine-substituted polyanilines**
Cihaner A., Onal A.
EUROPEAN POLYMER JOURNAL, vol.37, no.9, pp.1767-1772, 2001 (Journal Indexed in SCI)
- LXXXVII. **Electrochemical polymerization of 4-allylanisole**
Cihaner A., Testereci H., Onal A.
EUROPEAN POLYMER JOURNAL, vol.37, no.9, pp.1747-1752, 2001 (Journal Indexed in SCI)
- LXXXVIII. **Spectro-electrochemistry of diethyldithiocarbamate complexes of Ni(II), Pd(II) and Pt(II)**
Yaman S., Onal A., Isci H.
ZEITSCHRIFT FUR NATURFORSCHUNG SECTION B-A JOURNAL OF CHEMICAL SCIENCES, vol.56, no.2, pp.202-208, 2001 (Journal Indexed in SCI)
- LXXXIX. **Electroinitiated polymerization of 2-allylphenol**
Cihaner A., Onal A.
POLYMER BULLETIN, vol.45, no.1, pp.45-52, 2000 (Journal Indexed in SCI)
- XC. **ESR and conductivity investigations on electrochemically synthesized polyfuran and polythiophene**
Demirboga B., Onal A.
JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS, vol.61, no.6, pp.907-913, 2000 (Journal Indexed in SCI)
- XCI. **Gamma-radiation initiated addition of allylbenzene to the morpholine**
Nesterov S., Kucukyavuz S., Onal A.
JOURNAL OF RADIOANALYTICAL AND NUCLEAR CHEMISTRY, vol.242, no.1, pp.91-96, 1999 (Journal Indexed in SCI)
- XCII. **Radiation induced chain addition of allylbenzene to 1,4-dioxane**
Nesterov S., Kucukyavuz S., Onal A.
JOURNAL OF RADIOANALYTICAL AND NUCLEAR CHEMISTRY, vol.240, no.3, pp.953-957, 1999 (Journal Indexed in SCI)
- XCIII. **Electrochemical polymerization of furan and 2-methylfuran**
Demirboga B., Onal A.
SYNTHETIC METALS, vol.99, no.3, pp.237-242, 1999 (Journal Indexed in SCI)
- XCIV. **Polymerization by bis(ethylxanthato)nickel(II) as an initiator. I. Polymerization of styrene oxide**
Kayaturk N., Usanmaz A., Onal A.
JOURNAL OF MACROMOLECULAR SCIENCE-PURE AND APPLIED CHEMISTRY, no.1, pp.115-135, 1999 (Journal Indexed in SCI)
- XCV. **Electrochemical study of tricarbonyl(eta(6)-cyclooctatetraene)metal(0) complexes of the group 6 elements**
Yilmaz G., Onal A., Ozkar S.
ZEITSCHRIFT FUR NATURFORSCHUNG SECTION B-A JOURNAL OF CHEMICAL SCIENCES, vol.53, no.8, pp.875-880, 1998 (Journal Indexed in SCI)
- XCVI. **Thermal analysis of electroinitiated and radiation induced poly(epoxycyclopentanes) and poly(epoxycyclohexanes) by mass spectrometry**
HACALOĞLU J., ÖNAL A. M.
European Polymer Journal, vol.31, no.2, pp.103-107, 1995 (Journal Indexed in SCI)
- XCVII. **Pyrolysis Studies to Investigate Effects of Polymerization Techniques on Structure and Thermal Behavior of Poly(1,2-Epoxy-4-Epoxyethylcyclohexanes)**
HACALOĞLU J., Yalçın T., ÖNAL A. M.
Journal of Macromolecular Science, Part A, vol.32, no.6, pp.1167-1181, 1995 (Journal Indexed in SCI)
- XCVIII. **FREE-RADICAL MEDIATED INTERACTION OF ASCORBIC-ACID AND ASCORBATE/CU(II) WITH VIRAL AND PLASMID DNAs**
ERDEM G., ONER C., ONAL A., KISAKUREK D., OGUS A.
JOURNAL OF BIOSCIENCES, vol.19, no.1, pp.9-17, 1994 (Journal Indexed in SCI)
- XCIX. **ANODIC POTENTIAL HOMO ENERGY RELATIONS OF FLUORENE DERIVATIVES**
SEN S., CELEBI N., TURKER L., ONAL A.

- BULLETIN DES SOCIETES CHIMIQUES BELGES, vol.102, no.9, pp.583-587, 1993 (Journal Indexed in SCI)
- C. **RADIATION-INDUCED AND ELECTROINITIATED POLYMERIZATION OF ALLYL BENZENE**
SOUSY K, USANMAZ A, ONAL A.
POLYMER, vol.31, no.8, pp.1564-1567, 1990 (Journal Indexed in SCI)
- CI. **ELECTROCHEMISTRY OF TRICARBONYL(ETA-6-1,3,5-CYCLOHEPTATRIENE)METAL(O) COMPLEXES OF THE GROUP-6B ELEMENTS IN APROTIC MEDIA**
OZER Z., OZKAR S., ONAL A.
INORGANICA CHIMICA ACTA, vol.156, no.2, pp.281-284, 1989 (Journal Indexed in SCI)
- CII. **POLYMERIZATION OF N-VINYLCARBAZOLE INITIATED BY UV-RADIATION**
USANMAZ A., ONAL A., BOSTAN S.
BRITISH POLYMER JOURNAL, vol.21, no.1, pp.71-76, 1989 (Journal Indexed in SCI)
- CIII. **GAMMA-RADIOLYSIS OF POLY(A) IN AQUEOUS-SOLUTION - EFFICIENCY OF STRAND BREAK FORMATION BY PRIMARY WATER RADICALS**
ONAL A., LEMAIRE D., BOTHE E., SCHULTEFROHLINDE D.
INTERNATIONAL JOURNAL OF RADIATION BIOLOGY, vol.53, no.5, pp.787-796, 1988 (Journal Indexed in SCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **Synthesis and Electrochemical Polymerization of Diketopyrrolopyrrole Based Donor-Acceptor-Donor Monomers Containing 3,6- and 2,7-linked Carbazoles**
ÖNAL A. M., AKBAYRAK M.
The 69th Annual Meeting of the International Society of Electrochemistry, 2 - 07 September 2018
- II. **Synthesis and Characterization of Some Carbazole Based Electrochromic Polymers**
CANSU ERGÜN E. G., ÖNAL A. M.
Uluslararası Katılımlı VII. Polimer Bilim ve Teknoloji Kongresi, Eskişehir, Turkey, 9 - 12 September 2018
- III. **SYNTHESIS AND ELECTROPOLYMERIZATION OF NEW HYBRID MONOMERS CONTAINING CARBAZOLE UNITS**
AKBAYRAK M., ÖNAL A. M.
International Congress on Semiconductor Materials and Devices (ICSMD-2017), 17 August 2016 - 19 August 2017
- IV. **Spinel Metal Oxide Nanoparticles: Synthesis, Characterization and Catalytic Activities towards Water Oxidation**
ÇETİN A., ÖNAL A. M., NALBANT ESENTÜRK E.
Nano TR13, 22 - 25 October 2017
- V. **Karbazol Birimleri İçeren Yeni Hibrit Monomerlerin Sentezi Ve Elektrokimyasal Polimerizasyonu**
AKBAYRAK M., ÖNAL A. M.
29. Ulusal Kimya Kongresi, Turkey, 10 - 14 September 2017
- VI. **Polymerization of novel donor acceptor type functional fluorene derivatives at C-9 position**
ÇARBAŞ B., Kıvrak A., ÖNAL A. M., ZORA M.
243rd National Spring Meeting of the American-Chemical-Society, California, United States Of America, 25 - 29 March 2012, vol.243
- VII. **Electrochemical and chemical oxidation of $K(C_2H_5OCS_2)$, $[Ni(C_2H_5OCS_2)_2]$ and $[Ni(C_2H_5)_4]$ $[Ni(C_2H_5OCS_2)_3]$**
Dag O., Onal A., Isci H.
NATO Advanced Study Institute on Cytotoxic, Mutagenic and Carcinogenic Potential of Heavy Metals Related to Human Environment, PRZESIEKA, Poland, 15 - 26 June 1996, vol.26, pp.579-590

Supported Projects

ÖNAL A. M., ŞANLI S., Project Supported by Higher Education Institutions, İLETKEN POLİMERLER İLE MODİFİYE

EDİLMİŞ CAMSI KARBON ELEKTROTTLERİN ANTİOKSİDANTLARIN ELEKTROKİMYASAL TAYİNİNDE KULLANILMASI, 2018 - 2019

ÖNAL A. M. , ÇAKAL D., Project Supported by Higher Education Institutions, YENİ KONJUGE HİBRİT MONOMERLERİN SENTEZİ, POLİMERLEŞTİRİLMİŞ VE OPTOELEKTRONİK UYGULAMALARI, 2018 - 2019

ÖNAL A. M. , AKBAYRAK M., Project Supported by Higher Education Institutions, METAL OKSİTLERLE DESTEKLENMİŞ GRUP 9B METAL NANOPARÇACIKLARININ HAZIRLANMASI. TANIMLANMASI VE ELEKTROKİMYASAL KATALİZÖRLER OLARAK SUYUN AYRIŞMASINDA KULLANILMASI, 2018 - 2019

ÖNAL A. M. , DEMİR E., Project Supported by Higher Education Institutions, ORGANİK MOLEKÜLLERİN ELEKTRO-OKSİDASYONU İÇİN YÜKSEK KATALİTİK PERFORMANSA FOR ELEKTRO-OXİDATION OF ORGANIC MOLECULES, 2018 - 2019

TOPPARE L. K. , ÖNAL A. M. , ESENTÜRK O., DANIŞMAN M. F. , EREL GÖKTEPE İ., ÇIRPAN A., ASİL ALPTEKİN D., HACALOĞLU J., Project Supported by Higher Education Institutions, İletken Kopolimer Bazlı Alkol Biyosensörleri Geliştirilmesi, 2018 - 2019

Nalbant Esentürk E., Önal A. M. , TUBITAK Project, Spinel Yapıda Yeni Nano-Katalizörlerin Sentezi ve Temiz Enerji Üretimi için Suyun Yükseltgenmesindeki Kullanımlarının İncelenmesi, 2017 - 2019

ÖNAL A. M. , Project Supported by Higher Education Institutions, Donör-Akseptör-Donör Sisteminde Tasarlanmış Polimerin Elektrokimyasal Ve Kimyasal Yöntemle Sentezi, 2010 - 2019

ÖNAL A. M. , Project Supported by Higher Education Institutions, YENİ KONJUGE HİBRİT MONOMERLERİN SENTEZİ, POLİMERLEŞTİRİLMİŞ VE OPTOELEKTRONİK UYGULAMALARI, 2017 - 2017

ÖNAL A. M. , Project Supported by Higher Education Institutions, ELEKTROKATALİTİK HİDROJEN GAZI SALINIMINDA KULLANILMAK ÜZERE MODİFİYE EDİLMİŞ ELEKTROTTLERİN HAZIRLANMASI, 2017 - 2017

TOPPARE L. K. , ÖNAL A. M. , ESENTÜRK O., AZERİ Ö., BÜBER E., DANIŞMAN M. F. , EREL GÖKTEPE İ., ÇIRPAN A., ASİL ALPTEKİN D., HACALOĞLU J., Project Supported by Higher Education Institutions, Farklı makroyapılar kullanılarak iletken polimer bazlı çeşitli alkol biyosensörlerinin geliştirilmesi, 2017 - 2017

ESENTÜRK O., ÖNAL A. M. , DOĞAN Ö., DANIŞMAN M. F. , ASİL ALPTEKİN D., AYTEKİN Y. S. , HACALOĞLU J., PERSİL ÇETİNKOL Ö., Project Supported by Higher Education Institutions, ŞARAP KALİTE TAYİNİ İÇİN YÖNTEM GELİŞTİRME ÇALIŞMALARI, 2016 - 2016

ÖNAL A. M. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2016

ÖNAL A. M. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2016

ESENTÜRK O., ÖNAL A. M. , DANIŞMAN M. F. , HACALOĞLU J., Project Supported by Higher Education Institutions, AKTİF FARMASÖTİK MALZEME ANALİZİ İÇİN ALTERNATİF YÖNTEM GELİŞTİRİLMESİ, 2014 - 2015

ÖNAL A. M. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2015

ÖNAL A. M. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2014

ÖNAL A. M. , Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2014

ÖNAL A. M. , CANSU E. G. , Project Supported by Higher Education Institutions, BOR ESASLI YENİ ANORGANİK-ORGANİK MELEZ POLİMERİK MALZEMELERİN TASARIMI, SENTEZİ VE TEKNOLOJİK UYGULAMALARI, 2013 - 2013

ÖNAL A. M. , OĞUZTÜRK H. E. , Project Supported by Higher Education Institutions, HETEROSİKLİK VERİCİ-ALICI-VERİCİ TİPİ KARBAZOL TÜREVİ SENTEZİ, 2013 - 2013

TOFFOLI D., ÖNAL A. M. , ESENTÜRK O., DANIŞMAN M. F. , HACALOĞLU J., Project Supported by Higher Education Institutions, EGZOST GAZLARINDA BULUNAN NO_x MOLEKÜLLERİNİN İNDİRGEME/DEPOLAMA DÖNGÜSÜNDE KULLANILAN KATALİZÖRLERİNİN VERİMLERİNİN ARTIRILMASI, 2013 - 2013

ÖNAL A. M. , Project Supported by Higher Education Institutions, Donor-Akseptör Niteliği Taşıyan Düşük Bant Aralıklı Yeni Polifloren Kopolimer Türevlerinin Sentezi, 2009 - 2009

Memberships / Tasks in Scientific Organizations

International Society of Electrochemistry, Member, 2015 - Continues

Scientific Refereeing

POLYMER, SCI Journal, April 2019

ADVANCED OPTICAL MATERIALS, SCI Journal, January 2019

TUBITAK Project, 1005 - National New Ideas and Products Research Support Program, Orta Doğu Teknik Üniversitesi, Turkey, December 2018

TUBITAK Project, 1002 - Quick Support Program, Orta Doğu Teknik Üniversitesi, Turkey, November 2018

Project Supported by Higher Education Institutions, BAP Research Project, İstanbul Teknik Üniversitesi, Turkey, November 2018

VACUUM, SCI Journal, October 2018

PHYSICAL CHEMISTRY CHEMICAL PHYSICS, SCI Journal, April 2018

EUROPEAN POLYMER JOURNAL, SCI Journal, April 2018

PHYSICAL CHEMISTRY CHEMICAL PHYSICS, SCI Journal, January 2018

JOURNAL OF ELECTROANALYTICAL CHEMISTRY, SCI Journal, January 2018

Edit Congress and Symposium Activities

The 69th Annual Meeting of the International Society of Electrochemistry, Working Group, Bologna, Italy, 2018

The 69th Annual Meeting of the International Society of Electrochemistry, Working Group, Bologna, Italy, 2018

VII. Ulusal Polimer Bilim ve Teknoloji Kongresi, Working Group, Eskişehir, Turkey, 2018

VII. Ulusal Polimer Bilim ve Teknoloji Kongresi, Working Group, Eskişehir, Turkey, 2018

Citations

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