

Prof. Fatma Bedia Berker

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Biography

F.Bedia Erim (Berker) received his Bachelor's and MSc Degree from Istanbul University in Chemical Engineering and her Ph.D. from Istanbul Technical University in Chemistry. She is full Professor in Istanbul Technical University since 1998. Her research area is Analytical Chemistry: Method development and analysis with capillary electrophoresis; biopolymer applications in controlled drug release and removal of environmental pollutants; development of food coating and wound dressing agents from biopolymers; chemical and physical properties of biopolymer composites. She is the author of 98 SCI articles.

Education Information

Doctorate, Istanbul Technical University, Fen-Edebiyat Fakültesi, Kimya Bölümü, Turkey 1981 - 1985

Postgraduate, Istanbul University, Institute Of Graduate Studies In Sciences, Kimya Mühendisliği (Dr), Turkey 1978 - 1979

Undergraduate, Istanbul University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Turkey 1974 - 1978

Foreign Languages

English

Research Areas

Food Engineering, Food Science, Food Chemistry, Life Sciences, Biotechnology, Biomaterial, Chemistry, Analytical Chemistry, Separation Methods, Food Analysis, Chromatographic Analysis, Physical Chemistry, Polymers and Their Applications, Composites, Natural Sciences, Engineering and Technology

Academic Titles / Tasks

Professor, Istanbul Technical University, Fen-Edebiyat, Kimya, 1998 - Continues

Associate Professor, Istanbul Technical University, Fen-Edebiyat, Kimya, 1990 - 1998

Academic and Administrative Experience

İstanbul Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, 1997 - 2000

İstanbul Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Kimya Bölümü, 1995 - 1997

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Khellin and visnagin in different organs of Ammi visnaga and Ammi majus**
Adımcılar V., BEYAZIT N., Berker F. B.
NATURAL PRODUCT RESEARCH, vol.37, no.1, pp.164-166, 2023 (SCI-Expanded)
- II. **Antioxidant and antimicrobial chitosan films enriched with aqueous sage and rosemary extracts as food coating materials: Characterization of the films and detection of rosmarinic acid release**
Kahya N., Kestir S. M., Oztuerk S., Yolac A., TORLAK E., Kalaycıoğlu Z., AKIN EVİNGÜR G., Berker F. B.
INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, vol.217, pp.470-480, 2022 (SCI-Expanded)
- III. **Sustainable alginate-carboxymethyl cellulose superabsorbents prepared by a novel quasi-cryogelation method**
Orhan B., KAYGUSUZ H., Berker F. B.
JOURNAL OF POLYMER RESEARCH, vol.29, no.8, 2022 (SCI-Expanded)
- IV. **Effective photocatalytic degradation of malachite green dye by Fe (III)-Cross-linked Alginate-Carboxymethyl cellulose composites**
Karadeniz D., Kahya N., Berker F. B.
JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY A-CHEMISTRY, vol.428, 2022 (SCI-Expanded)
- V. **Graphene oxide/chitosan-based composite materials as adsorbents in dye removal**
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CHEMICAL ENGINEERING COMMUNICATIONS, vol.209, no.12, pp.1711-1726, 2022 (SCI-Expanded)
- VI. **Sample stacking - Capillary electrophoretic determination of nitrate and nitrite contents as nitric oxide metabolites in honey varieties originated from Anatolia**
Aftab J., Kalaycıoğlu Z., Kolaylı S., Erim F. B.
ACTA ALIMENTARIA, vol.50, no.4, pp.574-582, 2021 (SCI-Expanded)
- VII. **Electric-field induced phase transitions in capillary electrophoretic systems**
KAYGUSUZ H., Berker F. B., Berker A. N.
PHYSICS OF FLUIDS, vol.33, no.10, 2021 (SCI-Expanded)
- VIII. **Preparation and characterization of antibacterial nano cerium oxide/chitosan/hydroxyethylcellulose/polyethylene glycol composite films**
Kizilkonca E., TORLAK E., Berker F. B.
INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, vol.177, pp.351-359, 2021 (SCI-Expanded)
- IX. **Biopolymer-assisted green synthesis of functional cerium oxide nanoparticles**
KAYGUSUZ H., Berker F. B.
CHEMICAL PAPERS, vol.74, no.7, pp.2357-2363, 2020 (SCI-Expanded)
- X. **Antibacterial nano cerium oxide/chitosan/cellulose acetate composite films as potential wound dressing**
Kalaycıoğlu Z., Kahya N., Adımcılar V., Kaygusuz H., Torlak E., Akın-Evingür G., Erim F. B.
EUROPEAN POLYMER JOURNAL, vol.133, 2020 (SCI-Expanded)
- XI. **Barium ion cross-linked alginate-carboxymethyl cellulose composites for controlled release of anticancer drug methotrexate**
Kahya N., Gölcü A., Erim F. B.
JOURNAL OF DRUG DELIVERY SCIENCE AND TECHNOLOGY, vol.54, 2019 (SCI-Expanded)

- XII. **Surfactant modified alginate composite gels for controlled release of protein drug**
Kahya N., Erim F. B.
CARBOHYDRATE POLYMERS, vol.224, 2019 (SCI-Expanded)
- XIII. **Rosmarinic and carnosic acid contents and correlated antioxidant and antidiabetic activities of 14 Salvia species from Anatolia**
Adımcılar V., Kalaycıoğlu Z., Aydogdu N., Dirmenci T., Kahraman A., Erim F. B.
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- XIV. **Development of Anti-Aging and Anticorrosive Nanoceria Dispersed Alkyd Coating for Decorative and Industrial Purposes**
Kizilkonca E., Erim F. B.
COATINGS, vol.9, no.10, 2019 (SCI-Expanded)
- XV. **Nitrate and Nitrites in Foods: Worldwide Regional Distribution in View of Their Risks and Benefits**
Kalaycıoğlu Z., Erim F. B.
JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, vol.67, no.26, pp.7205-7222, 2019 (SCI-Expanded)
- XVI. **Evaluation of some Turkish Salvia species by principal component analysis based on their vitamin B2, mineral composition, and antioxidant properties**
Gezek G., Hashemi P., Kalaycıoğlu Z., Kaygusuz H., Sarıoğlu G., Doker S., Dirmenci T., Erim F. B.
LWT-FOOD SCIENCE AND TECHNOLOGY, vol.100, pp.287-293, 2019 (SCI-Expanded)
- XVII. **Electrochemical oxidation of curcuminoids: an experimental and computational investigation**
Kalaycıoğlu Z., Karadas N., Çınar M. E., Aysil Ozkan S., Ozer Unal D., Gölcü A., Berker F. B.
TURKISH JOURNAL OF CHEMISTRY, vol.43, no.3, pp.834-853, 2019 (SCI-Expanded)
- XVIII. **alpha-Glucosidase enzyme inhibitory effects and ursolic and oleanolic acid contents of fourteen Anatolian Salvia species**
Kalaycıoğlu Z., Uzaşçı S., Dirmenci T., Erim F. B.
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- XIX. **A Direct and Sensitive Analysis Method for Biogenic Amines in Dairy Products by Capillary Electrophoresis Coupled with Contactless Conductivity Detection**
Adımcılar V., Öztekin N., Erim F. B.
FOOD ANALYTICAL METHODS, vol.11, no.5, pp.1374-1379, 2018 (SCI-Expanded)
- XX. **Aqueous Removal of Sodium Dodecyl Benzene Sulfonate (SDBS) by Crosslinked Chitosan Films**
Kahya N., KAYGUSUZ H., Erim F. B.
JOURNAL OF POLYMERS AND THE ENVIRONMENT, vol.26, no.5, pp.2166-2172, 2018 (SCI-Expanded)
- XXI. **Graphene Oxide/Alginate Quasi-Cryogels for Removal of Methylene Blue**
BALKIZ G., PINGO E., Kahya N., KAYGUSUZ H., Erim F. B.
WATER AIR AND SOIL POLLUTION, vol.229, no.4, 2018 (SCI-Expanded)
- XXII. **Adsorptive removal kinetics of anionic dye onto chitosan films doped with graphene oxide: An in situ fluorescence monitoring**
Kahya N., BENER S., KAYGUSUZ H., Evingur G. A., Erim F. B.
CHEMICAL ENGINEERING COMMUNICATIONS, vol.205, no.7, pp.881-887, 2018 (SCI-Expanded)
- XXIII. **Effect of Anionic Surfactant on Alginate-Chitosan Polyelectrolyte Multilayer Thickness**
Kaygusuz H., Micciulla S., Berker F. B., von Klitzing R.
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- XXIV. **Antimicrobial cerium ion-chitosan crosslinked alginate biopolymer films: A novel and potential wound dressing**
KAYGUSUZ H., Torlak E., Akm-Evingur G., ÖZEN I., VON KLITZING R., Erim F. B.
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- XXV. **Characterization of Turkish honeybee pollens by principal component analysis based on their individual organic acids, sugars, minerals, and antioxidant activities**
Kalaycıoğlu Z., KAYGUSUZ H., Doker S., KOLAYLI S., Erim F. B.
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- XXVI. **Antimicrobial and physical properties of chitosan films incorporated with turmeric extract**

- Kalaycıoğlu Z., Torlak E., Akin-Evingur G., ÖZEN I., Erim F. B.
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- XXVII. **Total phenolic contents, antioxidant activities, and bioactive ingredients of juices from pomegranate cultivars worldwide**
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- XXVIII. **Microstructural and optical properties of SiO₂ glasses doped with ZnSe quantum dots and Nd³⁺ ions**
EL BOUKHARI T., KAYGUSUZ H., BILIR G., Erim F. B., Özen G.
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- XXIX. **Comparison of antioxidant, anticholinesterase, and antidiabetic activities of three curcuminoids isolated from *Curcuma longa* L.**
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- XXX. **Surfactant and metal ion effects on the mechanical properties of alginate hydrogels**
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- XXXI. **Methylene blue removal by alginate-clay quasi-cryogel beads**
Uyar G., KAYGUSUZ H., Erim F. B.
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- XXXII. **Analysis of Vitamin B₂ in Saffron Stigmas (*Crocus sativus* L) by Capillary Electrophoresis Coupled with Laser-Induced Fluorescence Detector**
HASHEMI P., Erim F. B.
FOOD ANALYTICAL METHODS, vol.9, no.8, pp.2395-2399, 2016 (SCI-Expanded)
- XXXIII. **Characterization of Anatolian honeys based on minerals, bioactive components and principal component analysis**
KAYGUSUZ H., Tezcan F., Erim F. B., YILDIZ O., Sahin H., Can Z., KOLAYLI S.
LWT-FOOD SCIENCE AND TECHNOLOGY, vol.68, pp.273-279, 2016 (SCI-Expanded)
- XXXIV. **Simultaneous Determination of Nitrate and Nitrite in Fish Products with Improved Sensitivity by Sample Stacking-Capillary Electrophoresis**
Kalaycıoğlu Z., Erim F. B.
FOOD ANALYTICAL METHODS, vol.9, no.3, pp.706-711, 2016 (SCI-Expanded)
- XXXV. **The sensitive capillary electrophoretic-LIF method for simultaneous determination of curcuminoids in turmeric by enhancing fluorescence intensities of molecules upon inclusion into (2-hydroxypropyl)-beta-cyclodextrin**
Kalaycıoğlu Z., Hashemi P., Günaydn K., Erim F. B.
ELECTROPHORESIS, vol.36, pp.2516-2521, 2015 (SCI-Expanded)
- XXXVI. **Removal of Fluoride from Aqueous Solution Using Aluminum Alginate Beads**
KAYGUSUZ H., Uzaşçı S., Erim F. B.
CLEAN-SOIL AIR WATER, vol.43, no.5, pp.724-730, 2015 (SCI-Expanded)
- XXXVII. **Natural alginate biopolymer montmorillonite clay composites for vitamin B₂ delivery**
KAYGUSUZ H., UYSAL M., Adımcılar V., Erim F. B.
JOURNAL OF BIOACTIVE AND COMPATIBLE POLYMERS, vol.30, no.1, pp.48-56, 2015 (SCI-Expanded)
- XXXVIII. **Aluminum Alginate-Montmorillonite Composite Beads for Defluoridation of Water**
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- XXXIX. **Removal of hexavalent chromium from aqueous solution by barium ion cross-linked alginate beads**
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- XL. **Gelation of PAAm-PVP composites: A fluorescence study**

- Evingur G. A., KAYGUSUZ H., Erim F. B., Pekcan O.
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- XLII. **Biopolymer-assisted synthesis of yttrium oxide nanoparticles**
Kaygusuz H., BILIR G., TEZCAN F., ERIM F. B., OZEN G.
PARTICUOLOGY, vol.14, pp.19-23, 2014 (SCI-Expanded)
- XLIII. **Enhancement of native fluorescence intensity of berberine by (2-hydroxypropyl)-beta-cyclodextrin in capillary electrophoresis coupled by laser-induced fluorescence detection: Application to quality control of medicinal plants**
Uzaşçı S., Erim F. B.
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- XLIV. **Effect of Calcium Ion Concentration on Small Molecule Desorption from Alginate Beads**
Evingur G. A., KAYGUSUZ H., Erim F. B., Pekcan O.
JOURNAL OF MACROMOLECULAR SCIENCE PART B-PHYSICS, vol.53, no.7, pp.1157-1167, 2014 (SCI-Expanded)
- XLV. **Cation Effect on Slow Release from Alginate Beads: A Fluorescence Study**
KAYGUSUZ H., Erim F. B., Pekcan O., Evingur G. A.
JOURNAL OF FLUORESCENCE, vol.24, no.1, pp.161-167, 2014 (SCI-Expanded)
- XLVI. **Recent analytical approaches to the analysis of biogenic amines in food samples**
Erim F. B.
TRAC-TRENDS IN ANALYTICAL CHEMISTRY, vol.52, pp.239-247, 2013 (SCI-Expanded)
- XLVII. **Determination of amino acids in pomegranate juices and fingerprint for adulteration with apple juices**
Tezcan F., Uzaşçı S., Uyar G., Öztekin N., Erim F. B.
FOOD CHEMISTRY, vol.141, no.2, pp.1187-1191, 2013 (SCI-Expanded)
- XLVIII. **Alginate/BSA/montmorillonite composites with enhanced protein entrapment and controlled release efficiency**
KAYGUSUZ H., Erim F. B.
REACTIVE & FUNCTIONAL POLYMERS, vol.73, no.11, pp.1420-1425, 2013 (SCI-Expanded)
- XLIX. **Determination of Critical Aggregation Concentration in the Poly-(vinylpyrrolidone)-Sodium Dodecyl Sulfate System by Capillary Electrophoresis**
Öztekin N., Erim F. B.
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- L. **Biocomposite films based on alginate and organically modified clay**
Tezcan F., GUNISTER E., OZEN G., ERIM F. B.
INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, vol.50, no.4, pp.1165-1168, 2012 (SCI-Expanded)
- L. **Biogenic Amines in Wines and Pomegranate Molasses-A Non-Ionic Micellar Electrokinetic Chromatography Assay with Laser-Induced Fluorescence Detection**
Uzaşçı S., Başkan S., Erim F. B.
FOOD ANALYTICAL METHODS, vol.5, no.1, pp.104-108, 2012 (SCI-Expanded)
- LI. **Monitoring the gelation of polyacrylamide-sodium alginate composite by fluorescence technique**
Evingur G. A., Tezcan F., Erim F. B., Pekcan O.
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- LII. **Evaluation of organic acid, saccharide composition and antioxidant properties of some authentic Turkish honeys**
Tezcan F., KOLAYLI S., Ulusoy H. S., Erim F. B.
JOURNAL OF FOOD AND NUTRITION RESEARCH, vol.50, no.1, pp.33-40, 2011 (SCI-Expanded)
- LIII. **Comparative Study of Chemical and Biochemical Properties of Different Melon Cultivars: Standard, Hybrid, and Grafted Melons**
KOLAYLI S., Kara M., Tezcan F., Erim F. B., Sahin H., ULUSOY E., ALIYAZICIOĞLU R.
JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, vol.58, no.17, pp.9764-9769, 2010 (SCI-Expanded)
- LIV. **Raman characterizations and structural properties of the binary TeO₂-WO₃. TeO₂-CdF₂ and ternary TeO₂-CdF₂-WO₃ glasses**

- Tatar D., OZEN G., ERIM F. B., Öveçoğlu M. L.
JOURNAL OF RAMAN SPECTROSCOPY, vol.41, no.7, pp.797-807, 2010 (SCI-Expanded)
- LIV. **Non-ionic micellar electrokinetic chromatography with laser-induced fluorescence: A new method tested with biogenic amines in brined and dry-salted fish**
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- LVI. **Determination of NTBC in serum samples from patients with hereditary tyrosinemia type I by capillary electrophoresis**
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- LVII. **Isolation and analysis of bioactive diterpenoids in *Salvia* species (*Salvia chionantha* and *Salvia kronenburgii*) by micellar electrokinetic capillary chromatography**
Öztekin N., Başkan S., KEPEKCI S. E., Erim F. B., TOPCU G.
JOURNAL OF PHARMACEUTICAL AND BIOMEDICAL ANALYSIS, vol.51, no.2, pp.439-442, 2010 (SCI-Expanded)
- LVIII. **Stacking in CE for Analysis of Bromate Flour Additive**
Öztekin N., AYDIN H. M., Erim F. B.
CHROMATOGRAPHIA, vol.70, pp.987-990, 2009 (SCI-Expanded)
- LIX. **Antioxidant activity and total phenolic, organic acid and sugar content in commercial pomegranate juices**
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- LX. **Glass transition and crystallization of 0.8TeO(2)+0.2CdF(2) glass**
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- LXI. **On-line stacking techniques for the nonaqueous capillary electrophoretic determination of acrylamide in processed food**
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- LXII. **NACE for the analysis of acrylamide in food**
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- LXIII. **Determination of alginate copolymer in pharmaceutical formulations by micellar electrokinetic chromatography**
Oztekin N., Başkan S., Erim F. B.
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- LXIV. **Analysis of anthraquinones in *Rumex crispus* by micellar electrokinetic chromatography**
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- LXVI. **Effect of cationic surfactant adsorption on the rheological and surface properties of bentonite dispersions**
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- LXVII. **CE determination of carbohydrates using a dipeptide as separation electrolyte**
GUEREL A., HIZAL J., OEZTEKIN N., Erim F. B.
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- LXVIII. **Effect of cetyltrimethylammonium bromide on the migration of polyaromatic hydrocarbons in capillary electrokinetic chromatography**

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- LXIX. **Effects of polyethyleneimine adsorption on rheology of bentonite suspensions**
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- LXX. **Determination of cationic surfactants as the preservatives in an oral solution and a cosmetic product by capillary electrophoresis**
OZTEKIN N., Erim F. B.
JOURNAL OF PHARMACEUTICAL AND BIOMEDICAL ANALYSIS, vol.37, no.5, pp.1121-1124, 2005 (SCI-Expanded)
- LXXI. **Determination of urinary succinylacetone by capillary electrophoresis for the diagnosis of tyrosinemia type I**
CANSEVER M., Erim F. B.
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- LXXII. **Effects of polyethyleneimine adsorption on the rheological properties of purified bentonite suspensions**
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- LXXIII. **Capillary electrokinetic separation of polycyclic aromatic hydrocarbons using cetylpyridinium bromide**
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- LXXIV. **Influence of cationic polymers on the rheological behavior of bentonite clay suspensions**
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- LXXV. **Direct determination of bromide ions in seawater by capillary zone electrophoresis using polyethyleneimine-coated capillaries**
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- LXXVI. **Effect of sodium dodecyl sulfate and sodium dodecyl benzene sulfonate on the flow behavior of purified bentonite dispersion**
ALEMDAR A., GUNGOR N., Erim F. B.
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- LXXIX. **Adsorption of polyethyleneimine from aqueous solutions on bentonite clays**
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- LXXX. **Separation of positional isomers of aromatic anions by capillary electrophoresis using quaternized porphyrine ion in aqueous solution**
KAVRAN G., AKKUS H., GUL A., Erim F. B.
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- LXXXI. **Determination of khellin and visnagin in Ammi visnaga fruits by capillary electrophoresis**
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- LXXXII. **Separation of polycyclic aromatic hydrocarbons with sodium dodecylbenzenesulfonate in**

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- LXXXIII. **Simultaneous determination of nitrite and nitrate in meat products and vegetables by capillary electrophoresis**
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Publication: 168

Citation (WoS): 2807

Citation (Scopus): 2987

H-Index (WoS): 28

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