

# In the spotlight

**Awards & Distinctions January 2014–December 2015** 



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The Technical University of Crete is among the top 400 Universities in the world, according to QS World University Rankings by Faculty 2014 in Engineering & Technology. In the QS World University Rankings by Subject category, TUC's School of Environmental Engineering is ranked between 251-300, for the Environmental Sciences. The rankings highlight the world's top universities, based on academic reputation, employer reputation and research impact. Following are the University's international distinctions during the years 2014-2015, starting from the most recent ones.

### TUC Council Member Professor Spiros Agathos, named a Fellow of the International Water Association



TUC Council Member Professor Spiros Agathos, has been named a Fellow of the International Water Association (IWA) for the year 2015. This distinction comes from IWA which is headquartered in the Hague and is the largest international association of researchers, professionals and organizations related to the water sector, with more than 10,000 individual members and corporate entities. The nomination follows a strict selection process based on the proposal and peer-review of persons who have made outstanding scientific or technological contributions in fields related to water. Professor Spiros Agathos will receive a certificate from the President of the IWA for his research in bioremediation and microbiology of wastewater treatment processes.

# CybEarth- winner at the International Competition "NCMA Spatio-temporal data visualization challenge", organized by the EU Program Copernicus







The proposal under the title **«Adaptive augmented visualization of spatial, temporal and spectral Earth Observation data upon dynamic mobile device views»**, submitted by the Asst. Prof. Panagiotis Partsinevelos and Team from TUC's **SenseLab**, is the winner at the International Competition **"NCMA Spatio-temporal data visualization challenge"**, which is organized by the EU Program Copernicus. The winning idea is a mobile app namely CybEarth that provides augmented first person views of reality. By positioning a mobile device over an area, layers of spatial data and Earth Observation (satellite) imagery are projected on screen, dynamically matching the field of view of the camera. The user may navigate in spectral and temporal scales and add geo-tags. Further, the mobile device can be adjusted in a prototype UAV platform to integrate real time image data. The app incorporates any type of spatial data including Sentinel SAR, multispectral, vector, and sensor data. CybEarth introduces a novel generic platform embracing most EO applications from a user point of view: sea, land, air environmental monitoring, natural disaster assessment land use change, agriculture phenology, etc. promoting Earth-system awareness e-Governance and citizen participation.

### The Oslo Opera House–Condition analysis and proposal for protection and maintenance of exterior marble



The Lab of Materials for Cultural Heritage and Modern Building (MaCHMoB) of the School of Architectural Engineering, Technical University of Crete with Scientific Responsible the Associate Professor Noni Maravelaki and main Researcher Dr Chrysi Kapridaki, along with the Betong Consult AS, NanoPhos SA, the Laboratory Materials and Methods for Cultural Heritage of the Politecnico di Milano and the Surfa Products Scandinavia AS, will, during 2015 and 2016, jointly carry out the project: "The Oslo Opera House – Condition analysis and proposal for protection and maintenance of exterior marble", in Oslo, Norway. The Oslo Opera House is a listed building.

The project is being done in close cooperation with the Norwegian Directorate for Cultural Heritage (Statsbygg) regarding the approximately 23 000 m<sup>2</sup> Carrara Marble that decorates the external facades and roof of the Opera. In this project, Prof. N. Kallithrakas Kontos, the MSc candidates Sofia Tzanaki and Kali Kapetanaki and the student Antonis Theologitis also collaborate.

#### Significant Paper at FPL London 2015 list



The paper Fast, Large-scale String Match for a 10Gbps FPGA-based Network Intrusion Detection System (2003), was awarded during the FPL London 2015 Conference and was included in the list of the most Significant Papers published, from 1991 to 2014, in the context of FPL. The selection was made by an international Significant Papers Committee (SPC). Only regular papers were considered and Google Scholar was used for citation counts. The total number of papers considered was 1765.

27 papers were selected, representing 1.5% of the total. The authors of the paper are: **loannis Sourdis**, who is currently an Associate Professor at the Chalmers University of Technology and **Dionisios Pnevmatikatos**, Professor at the ECE School of the Technical University of Crete. The paper was written during the postgraduate studies of I. Sourdis at TUC. Prof. Pnevmatikatos was the Master Thesis' Advisor.

#### First prize at the POTY2k15 contest organized by Dassault



The CADlab team of the School of Production Engineering and Management developed a unified production line for crystalline photovoltaic panel recycling as a part of the research program Redesign & Recycling of Photovoltaic Module Recycling, RE-PV. The industrial unit that was designed, addresses the promising domain of "Making Solar Energy Economical", one of the 14 Grand Challenges for Engineering identified by the US National Academy of Engineering. The scope of the project is the parametric design of an integrated crystalline silicon PV recycling process, applicable to the industrial level, with the use of CATIA design platform. The contest was organized by Dassault Systèmes. The CADlab team of **Meletios Rentoumis** and **Ilias Athanailidis**, under the supervision of professor Nikolaos Bilalis, conquered the first place among 432 team projects submitted from all over the world.

#### TUC Professors broke the 10,000 citation level according to Google Scholar



**Prof. Minos Garofalakis** (Electronic and Computer Engineering School) and **Prof. Markos Papageorgiou** (Production Engineering and Management School) broke the 10,000 citation level according to Google Scholar. Professor Garofalakis and Professor Papageorgiou, among many other distinctions throughout their careers, are the first ECE & PEM faculty members respectively, with 10,000+ citations to their work.

### Prof. C. Zopounidis was awarded during the 5th International Conference of FEBS



Audencia Nantes School of Management (ANSM) and the Centre for Financial and Risk Management awarded Professor Constantin Zopounidis for his scientific work in Management Science and Decision Making during the 5th International Conference of FEBS. The ANSM is ranking third in "Top Business School with significant international influence", in France. It has triple certification for MBA programs, as EQUIS, AACSB and AMBA.

#### TUC Eco Racing Team, 4th in Europe at the Shell Eco Marathon 2015





**TUC Eco Racing Team (TUCer)** participated for the 8th consecutive year at the International **Shell Eco Marathon 2015**, in Rotterdam, the Netherlands, in the **Urban Concept – Hydrogen category**. Our Team finished in the 4th place, proving once again, that it is one of the best teams in Europe! Taking part in the Urban Concept-Hydrogen category, TUCer Team improved its performance during the race, by presenting a new low-weight vehicle using an innovative gear box and a new energy-control management system. The team finally achieved an energy consumption of 193 km/m3 H2.

**2015 Team members:** Spanoudakis Polychronis, Piperidis Savvas, Tsinaris Ioannis, Krachtoudis Alexandros, Amargianos Alexandros, Koumartzakis Georgios, Karpouzis Theodosios, Tzortzis Ioannis, Davradou Agapi, Kouvlis Christos, Zorbas Sotirios and Tsourveloudis Nikolaos. TUC Eco Racing has won 5 prizes in the last 8 years.

# Prof. Costas Synolakis Receives 2015 John G. Moffatt-Frank E. Nichol Harbor and Coastal Engineering Award



Prof. Costas Emmanuel Synolakis, has been selected to receive ASCE's 2015 John G. Moffatt-Frank E. Nichol Harbor and Coastal Engineering Award. The selection committee particularly noted the wide adoption of his contributions for tsunami warning, hazard assessment, and mitigation. Prof. Synolakis is the leading tsunami engineer whose research over the past three decades spans a wide array of topics including: tsunamis, coastal engineering, water wave theory, breaking waves, runup, near-shore processes, seismology, marine geosciences, and volcanism. He has published numerous highly cited, key papers on these topics. His legacy includes the MOST code (the Method Of Splitting Tsunami model), which has become the standard operational model used for inundation maps along the US Pacific coast. Prof. Synolakis has mentored a generation of students who have themselves become leaders in academia, industry and government. Throughout his career, he has led, driven, inspired, and provided direction to tsunami research and coastal hazards mitigation on a truly global scale. He has organized and led several tsunami survey teams in the last twenty years. He received his Ph.D. in Civil Engineering in 1986, following his M.S. in Civil Engineering in 1979, and B.S. in Engineering and Applied Science in 1978 from the California Institute of Technology.

#### **GISTAM 2015 Best Paper Award**



The paper «3D Reconstruction and Visualization of Alternatives for Restoration of Historic Buildings: a New Approach» was awarded for the **GISTAM 2015 Best Paper Award**. **Lemonia Ragia** (*scientific associate at TUC*), **Froso Sarri** (*student at the ECE School of TUC*) and **Katerina Mania** (*Associate Professor, ECE School of TUC*), are the authors of the paper. This paper puts forward a 3D reconstruction methodology applied to the restoration of historic buildings taking advantage of the combined speed, range and accuracy of a total geodetic station. The measurements of geo-referenced points produced a fully interactive and photorealistic geometric mesh of an historic monument named 'Neoria'. 'Neoria' is a Venetian building located by the old harbour at Chania, Crete, Greece. The integration of tacheometry acquisition and computer graphics puts forward a novel integrated software framework for the accurate 3D reconstruction of a historical building.

The main technical challenge of this work was the production of an accurate 3D mesh based on a sufficient number of tacheometry measurements acquired fast and at low-cost. Interpolation methods ensured that a detailed geometric mesh was constructed based on a few points. Advanced interactive functionalities are offered to the user in relation to identifying restoration areas and visualizing the outcome of such works in a fully interactive application based on game engine technologies. Moreover, the user could photorealistically visualize the actual or restored monument and calculate distances between points.

# TUC is among the 400 world's top universities according to QS World University Rankings by Faculty 2014 in Engineering & Technology



The Technical University of Crete is among the 400 top Universities with a Faculty in Engineering and Technology, according to **QS World University Rankings 2014.** Other Greek Universites that are included under the same ranking category are: the National Technical University of Athens, the Aristotle University of Thessaloniki, the University of Patras and the National and Kapodistrian University of Athens. At the QS World University Rankings by Subject category, the School of Environmental Engineering of TUC is ranked among the places 251-300, for the Environmental Sciences. In the same category, the Aristotle University of Thessaloniki, is the only Greek University included. The rankings highlight the world's top universities, based on academic reputation, employer reputation and research impact

#### Many Happy re-Turns PROJECT is the Silver Winner at the International Design Awards







Marianthi Liapi (Research Associate at the TUC Transformable Intelligent Environments laboratory), Elli Gkologkina (graduate of the Department of Architectural Engineering-TUC) and Konstantinos-Alketas Oungrinis (Assistant Professor in Architectural Design and Innovative Engineering-TUC) are the IDA 14 - Silver Winners under the Products Designs Category for their Many Happy reTurns Project. Many Happy re-Turns is a leading project of the Educational Playscapes research direction at the Transformable Intelligent Environments Lab in the Technical University of Crete. A handful of designers, thinkers and entrepreneurs created the International Design Awards in 2007 as a response to the lack of recognition and celebration for smart and sustainable multidisciplinary design. The International Design Awards (IDA) exists to recognize, celebrate and promote legendary design visionaries and to uncover emerging talent in Architecture, Interior, Product, Graphic, and Fashion Design. IDA aspires to draw attention to the iconoclasm of design worldwide, conceptualizing and producing great work. IDA honorary juries examined over 1000 entries submitted by architects and designers of interiors, fashion, products, and graphics from 52 countries throughout the world.

#### **ICASSP 2015 Best Student Paper Award**







The paper "Noncoherent sequence detection of orthogonally modulated signals in flat fading with log-linear complexity" was awarded among 8 candidate papers for the ICASSP 2015 Best Student Paper Award. Panos N. Alevizos, Yannis Fountzoulas (PhD students), George N. Karystinos and Aggelos Bletsas (Associate Professors) of the School of Electronic and Computer Engineering are the authors of the paper, submitted at the IEEE ICASSP 2015. Three (3) "Best Student Paper Awards" were also awarded to: École Polytechnique Fédérale de Lausanne-EPFL, University of Minnesota (USA) and TU Delft (Netherlands). On its 40th anniversary, ICASSP is the world's largest and most comprehensive technical conference focused on signal processing and its applications. Each one of the Best Student Paper Award selected for the 2015 ICASSP Conference, represented a specific signal processing track. The Best Student Paper of the ECE School, TUC, is relevant to the following topic: "Signal Processing for Communications and Networking".

# Recognition & Reward from the FIWARE Lab Infrastructure Federation for the Cloud Infrastructure of Technical University of Crete



The Intelligence Systems Laboratory of the School of Electronic & Computer Engineering, Technical University of Crete (TUC), participates with the 'Crete Node' (Openstack cloud infrastructure) in the FIWARE Lab Infrastructure Federation, a sustainable pan-European open federation of test infrastructures, realized by the XIFI project (<a href="https://www.fi-xifi.eu/home.html">https://www.fi-xifi.eu/home.html</a>). The FIWARE Lab infrastructure federation comprises 19 nodes and as such, it can cope with large trial deployments and can serve the various needs of Future Internet users and entrepreneurs.

The Crete Node is being financed by internal, national and EU funds, it is maintained and supported by the personnel of the intelligent Systems Laboratory, in cooperation with personnel of the Network Operations Center (NOC) of TUC. Recently, 'Crete Node' has participated in the **FIWARE Lab Recognition & Reward Program**, based on 3 levels of engagement accreditation (Bronze, Silver, and Gold) and has received the **Silver label** complying with the Silver quality validation criteria of its infrastructure.

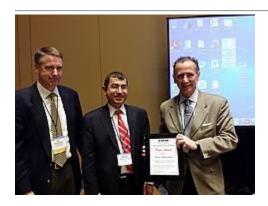
#### Scientist's Award" to a TUC student



A scholarship in the context of the "Young Scientist's Award" contest has been awarded **to Ms. Marcela Katsanevaki**, student of the Environmental Engineering School of the Technical University of Crete, for her project entitled "Game Theory in water resources management".

The work has been presented as part of the session "Water Sciences Pop-Ups" during the International Conference European Geosciences Union general assembly in Vienna in April 2015 (http://www.egu2015.eu/).

#### TRB Freeway Operations Committee Best Paper Award



On behalf of all his co-authors, Professor Markos Papageorgiou has received the Best 2014 Freeway Operations Paper Award from the Freeway Operations Committee of Transportation Research Board (TRB) for the scientific paper of Faulkner, L., Dekker, F., Gyles, D., Papamichail, I., Papageorgiou, M. "Evaluation of HERO coordinated ramp metering installation at the M1/M3 Freeway in Queensland, Australia". This paper has been presented at the 93rd Annual Meeting of the Transportation Research Board, Washington, D.C., January 12-16, 2014, and will be published in the Transportation Research Record. At the attached photo, Prof. Haitham Al-Deek, President of the TRB AHB20 Paper Review Subcommittee, is giving the Award to Professor Markos Papageorgiou, together with Dr. Jon Oberberger, President of the TRB Freeway Operations Committee, during the meeting of the Committee in January 13, 2015.

#### Election of Professor E. Gidarakos to the IWWG Managing Board



**Dr. Evangelos Gidarakos,** Professor at the School of Environmental Engineering of the Technical University of Crete, was elected as a **new member of the IWWG** (International Waste Working Group) Managing Board. By a unanimous decision of the ten Managing Board members his membership for the next three years has been approved in the framework of the 14th IWWG MB meeting at the Island of San Servolo, Venice, Italy on November 16th, 2014. The Managing Board of the IWWG is composed of experts with a high professional and scientific profile.

Prof. E. Gidarakos, is the Director of the **Toxic and Hazardous Waste Management Laboratory** of TUC, and has already had a very successful collaboration with IWWG for the last 8 years, like e.g. the organization of the Hazardous Waste Management Conference (CRETE). This election is a great honor for Prof. Gidarakos, as well as for the Technical University of Crete and establishes a new collaboration with an internationally recognized organization in the scientific area of Waste Management.

### International Distinction for the Architectural Engineering School at the 8th European Landscape Biennial













The School of Architectural Engineering of TUC, achieved a place within the 13 finalists Schools working on Landscape Architecture. In total, 102 Schools from all over the world participated in the 8th European Landscape Biennial that took place in Barcelona, Spain, on October 25-27,2014. The participation of the School was based on work from students' Diploma Thesis on Landscape Architecture including various subjects given to students of the 8th semester. The University of Toronto was the winner. List of the nine (9) finalists: Cambridge Harvard University, Leibniz University Hannover, Pontifica Universidad Catolica-Chile, Technical University of Crete, University College of Dublin, University of Ljubljana Biotechnical Faculty, University of New South Wales-Sydney, Universidad Politecnica de Catalunya, University of Washington.

#### Best PhD Dissertation Award 2014, IEEE Intelligent Transportation Systems Society



**Dr. Mehdi Keyvan-EKbatani**, a PhD Graduate from the Production Engineering and Management School of TUC, was given the **second prize Best PhD Dissertation Award 2014 of the IEEE Intelligent Transportation Systems Society.** The award was given on October 9th 2014, at the International IEEE Conference on Intelligent Transportation Systems, that took place in Qingdao, China. Mr Mehdi Keyvan-Ekbatani, is now a Post-Doc researcher at the Delft Institute of Technology, the Netherlands. The advisor of the dissertation is **Markos Papageorgiou**, Professor at the School of Production Engineering and Management of TUC and the title of the dissertation is **"Real-Time Urban Traffic Control under Saturated Traffic Conditions"**.

### Dr Dimitrios Angelakis, representative of Greece at the Management Committee of the EU COST Action "Nanoscale Quantum Optics"



Dr Dimitrios Angelakis, Assistant Professor at the School of Electronic and Computer Engineering was recently appointed representative of Greece at the Management Committee of the EU COST Action "Nanoscale Quantum Optics" for the period August 2014 to May 2018. The **Nanoscale Quantum Optics** Action involves the investigation of quantum phenomena in nanophotonics systems and nanotechnological applications for developing cutting-edge photonic technologies within Europe. The Action aims at promoting and coordinating forefront research in nanoscale quantum optics (NQO). It will contribute to the discovery of novel phenomena and define new routes for applications in information & communication technology, sensing & metrology and energy efficiency. The main vision is to establish a fruitful and successful interaction among scientists and engineers from academia, research centers and industry, focusing on quantum science & technology, nanoscale optics & photonics and materials science.

### Second Prize Paper Award to Assistant Professor Effichios Koutroulis, IEEE Transactions on Power Electronics

The paper "Design Optimization of Transformerless Grid-Connected PV Inverters Including Reliability" published in the prestigious journal IEEE Transactions on Power Electronics, vol. 28, no.1, pp. 325-335, in January 2013, has been awarded the Second Prize Paper Award for 2013. This paper was selected among 521 articles published in 2013 in the prestigious journal IEEE Transactions on Power Electronics. **Authors:** Assistant Professor Eftichios Koutroulis, School of Electronic and Computer Engineering, Technical University of Crete | Professor Frede Blaabjerg, Dept. of Energy Technology, Aalborg University.

# Professor Konstantinos Zopounidis earns the highest distinction from the Spanish Royal Academy of Doctors





**Professor Konstantinos Zopounidis** (Technical University of Crete, School of Production Engineering and Management and Audencia Nantes School of Management) has been named for the second time, in less than two years, a corresponding academic of the Spanish Royal Academy of Doctors (Real Academia de Doctors de Espana) on July 10th, 2014. The Spanish Royal Academy of Doctors is a prestigious interdisciplinary organization with 100 years of history. The title of corresponding academic is the highest distinction bestowed upon foreign members. Professor K. Zopounidis **was awarded the gold medal** at a ceremonious conference on the occasion of the Royal

Academy of Doctors celebrating its' 100 years. Professor K. Zopounidis delivered a speech on the subject "Countries' loans: a Multicriteria Methodology Evaluation". In 2013, Professor K. Zopounidis was also named an Academic at the Spanish Royal Academy of Financial and Economic Sciences.

#### Distinction for the Laboratory of Digital Image and Signal Processing



Two articles, from the *Digital Image and Signal Processing Laboratory of the School of Electronic and Computer Engineering* (Director: Professor Michalis Zervakis) have been published in the prestigious IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS. Both articles were selected as featured Articles. What's more, the Magazine's editors selected ARTICLE No1, as the feature Cover Page for the May 2014 edition.

**ARTICLE No 1:**Stelios Sfakianakis, Ekaterini S.Bei, Michalis Zervakis, Member, IEEE, Despoina Vassou and Dimitrios Kafetzopoulos, On the Identification of Circulating Tumor Cells in Breast Cancer, IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, Vol.18, No 3, May 2014. Special Issue - Featured Article and Cover Page.

**ARTICLE No 2**: K.Kalantzaki, E.S.Bei, K.P.Exarchos, M.Zervakis, M.Garofalakis, and D. I. Fotiadis, Nonparametric Network Design and Analysis of Disease Genes in Oral Cancer Progression, IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, Vol. 18, No 2, March 2014. Regular Issue - Featured Article.

### TUC Eco Racing Team, 4th in Europe at the Shell Eco Marathon 2014





The Team from the Technical University of Crete (TUCer) participated for the seventh consecutive year (12th-19th May) at the **International Shell Eco Marathon 2014**, in Rotterdam, the Netherlands, in the Urban Concept category. This year the competition was very strong. Our Team managed to finish, (as in 2013) **in 4th place**, proving that once again, it is one of the best teams in Europe. Taking part in the Urban Concept Hydrogen category, TUCer Team improved its performance during the race, by using new innovative systems, such as the automatic transmission system and an advanced motor controller. The team

# Costas E. Synolakis, Professor of the Environmental Engineering School, receives the 2014 Sergey Soloviev Medal



The **2014 Sergey Soloviev Medal** was awarded to **Professor Costas E. Synolakis**, School of Environmental Engineering, Technical University of Crete, by the EGU European Geosciences Union for his superb research contributions to tsunami mitigation, combining theory, laboratory experiments, field surveys and the development of widely used numerical codes to improve tsunami mitigation.

The awards of the European Geosciences Union - EGU are considered the highest honors at an international level in the field of geosciences, planetary and space sciences. The **Sergey Soloviev Medal** was presented to Dr. Costas Synolakis at a formal ceremony during the annual conference of the EGU on "The Face of the Earth - Process and Form", on April 30th in Vienna.

# Georgios E. Stavroulakis Honorary Professor at Jordan University of Science and Technology





**Professor Georgios E. Stavroulakis**, Deputy Rector of the Technical University of Crete and Professor Charalampos C. Baniotopoulos, University of Birmingham, were appointed **Honorary Professors** at the **Department of Civil Engineering of the Jordan University of Science and Technology**. The ceremony took place at the Campus of Jordan University of Science and Technology in Irbid, Jordan, April 27, 2014 within the International Conference CESARE'14 Civil Engineering for Sustainability & Resilience.

# TUC Council Member Professor Spiros N. Agathos inducted into medical and biological engineering elite





The American Institute for Medical and Biological Engineering (AIMBE) has announced the induction of Spiros N. Agathos, Ph.D., Professor of Biological Engineering, Department of Bioengineering, Earth and Life Institute at Catholic University of Louvain, to its College of Fellows. Dr. Agathos was nominated, reviewed, and elected by peers and members of the College of Fellows for outstanding contributions in the fields of animal cell bioprocessing and microbial engineering as applied to health, industry, and the environment. The College of Fellows is comprised of the top two percent of medical and biological engineers in the country. The most accomplished and distinguished engineering and medical school chairs, research directors, professors, innovators, and successful entrepreneurs, comprise the College of Fellows. AIMBE Fellows are regularly recognized for their contributions in teaching, research, and innovation. AIMBE Fellows have been awarded the Presidential Medal of Science and the Presidential Medal of Technology and Innovation and many also are members of the National Academy of Engineering, Institute of Medicine, and the National Academy of Sciences. A formal induction ceremony was held during AIMBE's 2014 Annual Meeting at the National Academy of Sciences Great Hall in Washington, DC on March 24, 2014. Dr. Agathos was inducted along with 117 colleagues who make up the AIMBE College of Fellows Class of 2014. AIMBE's mission is to recognize excellence in, and advocate for, the fields of medical and biological engineering in order to advance society. Since 1991, AIMBE's College of Fellows has lead the way for technological growth and advancement in the fields of medical and biological engineering.

# TUC Professor Georgios Christidis received the Jackson Award by the Clay Minerals Society



The MARION L. AND CHRISTIE M. JACKSON MID-CAREER CLAY SCIENTIST AWARD was presented to Dr. George Christidis, Professor, Economic Geology of Industrial Minerals Research Unit, Technical University of Crete, Greece, at the CMS annual meeting at the University of Illinois at Urbana-Champaign. Professor Christidis's original and scholarly research on bentonites has made a significant contribution to clay minerals science. Of particular note is his work on the evaluation of the heterogeneity of smectites in bentonites and on a new method for determining the layer charge in K-smectites. His research on the synthesis of pure high-added-value zeolites from fi ne-grained perlite waste is also significant.



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