



AMPERE Newsletter

Trends in RF and Microwave Heating

<http://www.ampere-newsletter.org>

Issue 110

April 26, 2022

<i>In this Issue:</i>	Page
University Management and Microwaves: the Art of Matching Alejandro Díaz-Morcillo	1
Microwave Research at the School of Engineering University of Aberdeen Claudia Fernandez-Martin	4
Report on the 15th Symposium of Japan Society of Electromagnetic Wave Energy Applications K. Ikenaga, Y. Nikawa	5
Ricky's Afterthought: Are We Alone in the Universe? The Search for an Earth-like Exoplanet A.C. Metaxas	7
Announcement of Special Issue on "Advances in Sonication and Microwave Processing on Inorganics"	9
Minutes of 4GCMEA Local Organizing Committee Online Meeting, 8th April 2022	10
AMPERE-Newsletter's Editorial Information	11

University Management and Microwaves: the Art of Matching

Alejandro Díaz-Morcillo

Electromagnetics and Matter Group

Department of Information Technologies and Communications

Polytechnic University of Cartagena, Spain

Contact E-mail: alejandro.diaz@upct.es

Sometimes in a lifetime the boundary conditions open a window of opportunity to completely change your work and even your social life. In my case, after almost 20 years devoted to teaching and microwave engineering, it was for serving my university, the Polytechnic University of Cartagena (UPCT), in the position of Rector. The advisory committee of the AMPERE's Newsletter kindly invited me to write down a few lines about this experience and my return to teaching and researching tasks. So, here is the story.

The chance

After a brief period as Vice-Rector on Research and Innovation, I had the chance in 2016 to present my candidature for the election of Rector.

In all public universities in Spain the university community elects the rector every four years through a weighted vote. In the case of UPCT, full-time PhD faculties are weighted with 51%, part-time and non-PhD lecturers/researchers with 15%, administrative staff with 9% and students with 25%. It was a hard campaign of ten days between two candidates. Indeed, the most exhausting days I remember of my whole life. In the end I won with 54% versus 46% and on April 26th I took office.

The term

What is there in common with university management at a political level and microwaves? I could summarize it in a short sentence: The art of matching, by which I mean, matching the internal and external waves. Inner waves are commanded mainly by the heads of departments (15) and the heads of schools (in Cartagena we have Industrial, Telecommunication, Civil, Naval and Agronomic Engineering, Architecture and Business schools, plus a Defense center, which belongs to the Spanish Air Force). The outer waves, that is, the social forces,

are represented by the Spanish Research and University Ministry, the Regional Government, the City Council, companies, entrepreneur associations and a long etcetera. Between these two factions the Rector acts as a "matching network", trying to get the best results from the university for society, and trying to get for his community the best working conditions for both teaching and researching.

I had the greatest of luck in that my mandate coincided with my colleague and friend Juan Monzó (former Secretary of AMPERE) in charge of the General Direction of Universities and Research, that is, the department in the Regional Government responsible for control and funding of public universities. His knowledge of the University and his experience in research helped inform the understanding required between public powers and politicians.

During my mandate, I had four main goals:

- Improving the quality of teaching tasks.
- Increasing the knowledge transfer to companies, especially through the creation of university/company chairs. At the end of my mandate, we had 50 of these chairs, where companies and the university worked together, with room within the university campus, for a long-term strategy for achieving technological goals and/or searching for talent amongst our students and alumni for the company.
- Increasing the internationalization of UPCT, attracting foreign students from Europe, Latin-America, North-Africa, China (see Fig 1) and India. At the end of my mandate, I had the great fortune of creating the European University of Technology (EUt+), within the Erasmus+ European Universities program, a European consortium of 8 universities from 8 countries (Germany, Latvia, Ireland, Bulgaria, Cyprus, France, Romania and Spain) to transform them, in

the medium term, in a unique university with 8 different campuses (see Fig. 2).

- Dissemination of science and technology among the youngsters and children in order to increase STEM vocations, especially for girls. I would point out in this respect, the project for the STEM promotion among girls “Quiero Ser Ingeniera” (I Want to Be an Engineer) (see Fig. 3)



Figure 1. Signing of a MoU for exchange of students and lecturers with the University of Jilin, China



Figure 2. Signing of the EUT+ bylaws at Cluj – Napoca, Romania



Figure 3. Meeting with more than 3000 girls within the project “I Want to Be an Engineer”

Extra-time

After almost four years, I felt I had neither the energy nor the enthusiasm for four more years. Therefore, at the end of December 2019 I announced to the Senate of my University my decision not to present my candidature for the re-election in March 2020.

My plans were to have a sabbatical after these four years of practical disconnection from research, basically for two reasons: first, I could do it, since I was hardly involved in research projects that tied me to my University; second, I had to do it, since an intensive update was necessary after such long period away from technical papers, conferences and projects. Unfortunately, the pandemic spoilt this opportunity. The elections, which had been called in February, were suspended. In a giant effort by our lecturers, classes were transformed from in-person to video-conference format in just two days: the weekend of 14–15 March, when the lockdown was set in Spain. In the next weeks many of internal norms and regulations were modified in order to fit the new remote conditions for master classes, laboratory sessions and examinations. A temporary COVID committee was created on 13 March for an agile management of critical matters: teaching, access to researching facilities, situation of incoming and outgoing Erasmus students, students’ residence, loan of equipment to students in order to allow internet connection for classes, and so on.

Finally, after finishing the 2019-20 course and having prepared the university for 2020/21, the elections took place in July by means of electronic vote and on the 28th I finished my term. I can summarize it, despite there being neither calm days nor resting weekends or holidays, as a very rewarding period, where I grew as I couldn’t have imagined as a person.

Coming back to research activities

From the Fall of 2020 I returned first to my research on microwave engineering, and later to lectures (I teach currently Analysis and Design of Electrical Circuits). I was so eager to return to research that I am now working on different technological readiness levels, different and distant frequency regions and different power levels. Let me try to explain it. I could say that I am nowadays in the three stages of knowledge generation and its valorization, i.e.,

research–innovation–entrepreneurship. In other words, I am both trying to transform the money in knowledge and vice versa.

First, I am involved in a very fundamental research subject (which hopefully could find its application in ten or twenty years, but it is key for the understanding of our universe), which consist of the analysis and design of resonant cavities for the detection of the axion, a hypothetical particle which could compound the dark matter [1]. At this moment, we are looking for the axion at three different regions of the electromagnetic spectrum: the lower UHF band (300–500 MHz), the X band (8–12 GHz) and the W band (75–110 GHz). The challenge is tremendous, since it is necessary to detect powers around 10^{-24} W within an 8 T magnet and at a temperature between 10 mK and 4K.

Second, I am collaborating in the innovation step, among other projects, through the development of new microwave-assisted processes for devulcanizing of rubber [2], in a European project led by my colleague and friend José Fayos (former Secretary of AMPERE, too). Finally, I am involved in the creation of a spin-off company for the production of microwave drying machines of clothes for the home market. In these two last applications I feel more comfortable, working at 2.45 GHz and with powers in the order of kilowatts.

A tribute

Some weeks ago, my portrait joined those of the former Rectors in the Rectorate Hall (see Figures 4 and 5). I included in the painting two books which have greatly influenced my research career. One of them is *Foundations of Electroheat: A Unified Approach*, authored by our colleague and past Honorary/President of AMPERE and an example to us all, Ricky Metaxas. It's a little tribute for a research life devoted to fostering the high-power microwave and radio frequency technologies and its community.



Figure 4. Rectorate building at UPCT

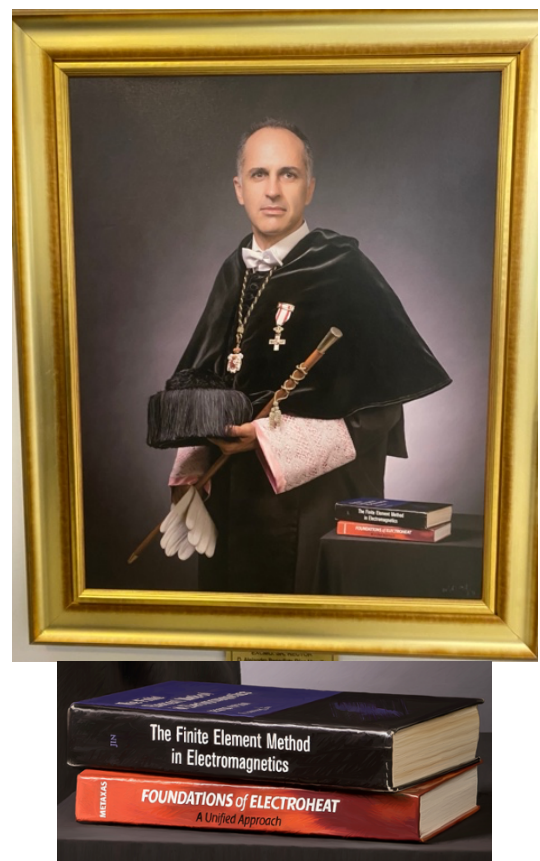


Figure 5. Portrait in the rectoral hall, with zoom of the books in the painting.

References

1. Alejandro Díaz-Morcillo et al., Design of New Resonant Haloscopes in the Search for the Dark Matter Axion: A Review of the First Steps in the RADES Collaboration, *Universe* 2022 8 (5), January 2022. arXiv:2111.14510 [physics.ins-det].
2. Rafael Pérez Campos et al., Improved control on the microwave devulcanizing of ground tire rubber by means of sulphur gas sensors, *18th International Conference on Microwave and High Frequency Applications. AMPERE 2021*, Goteborg, Sweden, 13th September 2021.

About the author

Communications at UPV, and in 1999, he joined the

Alejandro Díaz-Morcillo received the M.S. Eng. and Ph.D. degrees in telecommunication engineering, both from the Valencia Polytechnic University (UPV), Valencia, Spain, in 1995 and 2000, respectively. From 1996 to 1999, he was a Research Assistant in the Department of

Department of Information Technologies and Communications, Technical University of Cartagena (UPCT), Spain, as a Teaching Assistant, where he is currently Professor since 2011. He leads the “Electromagnetics and Matter” Research Group at UPCT and his main research interests include numerical methods in electromagnetics, microwave engineering (communications and IMS applications) and dielectric characterization. He has been Vice-Chancellor for Research and Innovation at UPCT and President of UPCT (2016-2020).

Microwave Research at the School of Engineering University of Aberdeen

Claudia Fernandez-Martin

University of Aberdeen, School of Engineering, Fraser Noble Building, Room 356, King's College, Aberdeen, AB24 3UE

Contact E-mail: cfmartin@abdn.ac.uk

The University of Aberdeen (UK) has a growing and established research group working on microwave-assisted carbon capture technologies at the school of Engineering. Led by AMPERE's Secretary elect, Dr Claudia Fernandez-Martin (CFM), this active research group is investigating how the energy penalty associated with regeneration in any carbon capture process can be mitigated with the use of microwaves.

Their recent research outputs in which microwave technology is investigated include a PhD thesis, in which an in-depth systematic investigation on microwave-assisted post-combustion carbon capture and its comparison with the analogous conventional process is conducted ('Feasibility study of microwave-assisted swing adsorption for post-combustion carbon capture'. Mohamud Mohamed Abdi Yassin, 2021. Main Supervisor: CFM. Part of the project titled: Intensification of post-combustion capture by using advanced regeneration technologies).

The University of Aberdeen's microwave research group has well-established collaborations with several universities in Europe working in microwave technology, such as The University of Nottingham and Valencia Polytechnic University (UPV).

CFM's research group is currently working in collaboration with Professor Catala's group from the UPV on the design, and commission of a unique apparatus to carry out further investigation on the application of microwave irradiation on chemical processes, mainly hydrogen production and carbon capture. Some of CFM research group's recent publications on the use of microwaves for carbon capture applications can be found in the following “for further reading” section.

For further reading

1. M.M. Yassin, J.A. Anderson, G.A. Dimitrakis, C.F. Martín* (2021). Effects of the heating source on the regeneration performance of different adsorbents under post-combustion carbon capture cyclic operations. A comparative analysis. Separation and Purification Technology, vol 276 Impact Factor: 7.312. Quartile: Q1
2. M. M. Yassin, S. Biti, W. Afzal, C. F. Martín* (2021). A systematic analysis of the dynamics of microwave- and conventionally-assisted swing adsorption on zeolite 13X and an activated carbon under post-combustion carbon capture conditions. Journal of Environmental Chemical Engineering. Vol 9 (6), 106835. Impact Factor: 5.909. Quartile: Q1
3. <https://www.abdn.ac.uk/engineering/people/profiles/cfmartin#publications>

About the author

Dr. Claudia Fernandez-Martin is a Lecturer in Chemical Engineering, Member of the Materials and Chemical Engineering Research Group at the School of Engineering (University of Aberdeen, UoA), Champion of the Circular Economy Theme (Centre for Energy Transition), Deputy Champion in Carbon Capture Utilisation and Storage CCUS (UoA), Deputy Environmental & Biodiversity Theme (School of Engineering), and Academic Member of the UK Carbon Capture and Storage Research Centre (UKCCSRS).

She has over 13 years' experience in: a) experimental and numerical modelling of Carbon Capture processes, b) the development of low-cost and advanced materials for CO₂ capture at post-combustion conditions (capture from gas and coal-based power plants emissions at atmospheric pressure) and pre-combustion conditions (capture from shifted syngas at elevated pressure), c) transformation of wastes, including biomass/plastic-based wastes, into porous adsorbents for gas separation applications, such as CO₂ capture and biogas upgrading, d) transformative

technologies, including microwaves, to achieve more efficient carbon capture processes.

Dr Claudia Fernández-Martín has done exhaustive research on a wide range of different materials for carbon capture applications, such as organic polymers (thermoplastic and thermoset resins, hyper-crosslinked organic polymers, and low-density organic polymers), composite polymeric and hybrid membranes, impregnated silicon-based adsorbents, and catalysts supported in carbon-based materials.

Dr Fernández-Martín has extensive experience in microwave-assisted processes (namely microwave-assisted regeneration of sorbents for gas separation including carbon capture, pre-treatment of lignocellulosic and food wastes, and microwave-assisted synthesis). She has supervised 4 Post-Doctoral Research Associates and a thesis to completion, and currently leads a research group composed by 7 PhD students. Additionally, she is mentor of new academics and PhD students in the School of Engineering, has led and currently leads several academic and industrial projects as Principal Investigator, has published in high-impact scientific journals and presented her job in national and international conferences, seminars and workshops.

More information can be found in this link:

<https://www.abdn.ac.uk/engineering/people/profiles/cfmartin>

Report on the 15th Symposium of Japan Society of Electromagnetic Wave Energy Applications

K. Ikenaga¹, Y. Nikawa²

¹Graduate School of Engineering, Sojo University, Japan

²Graduate School of Engineering, Kokushikan University, Japan

Contact E-mail: nikawa@kokushikan.ac.jp

The 15th Symposium of the Japan Society of Electromagnetic Wave Energy Applications (JEMEA) was held on-line from 13-15 October, 2021, with short courses and equipment display. The Symposium is sponsored by JEMEA. The Symposium of JEMEA is held annually from 2007, and this is the 15th time. Professor Kazutoshi Ikenaga chaired the executive committee of the 15th Symposium. Basically, the presentations were in Japanese but the International mini Symposium entitled “Microwave Technology for Green

Chemistry” on 14 October was conducted in English.

Prior to the symposium, short courses were held on the first day. The Theme of the short courses were: “-New Trends in Microwave Technology- ~AI/MI Technology & Fusion into Biotechnology~”. Basically, 4 courses were held, with 52 participants attending. The program of the short courses is uploaded on the website [1].

In the Symposium, the total number of the papers presented was 55. This includes 8 papers in special session, 2 papers in JEMEA Prize recipient

presentation, 36 papers in oral session, and 9 poster paper presentations. 95 participants attended the Symposium, and the program is uploaded on the website [2].

The presented papers in the Oral and Poster sessions have a wide range of content. We could categorize these as follows: 3 papers in the field of measurement and simulation, 6 papers in that of power devices and systems, 7 papers in material processing, 14 papers in microwave chemistry, 13 papers in microwave physics, and 2 papers in biological application. Therefore, almost 30 % of the presented papers were related to chemical reactions and another 30 % were related to microwave physics.

Zoom was used and two venues designated A and B were activated for technical sessions. The opening ceremony, international mini symposium, poster sessions, award ceremony, corporate PR and closing ceremony were held in venue A.

The 15th Symposium on JEMEA was very fruitful and successful and it will be followed by the 16th Symposium to be held from 12 to 14 October, 2022. The information will be uploaded at the dedicated website [3].

We are looking forward to your participation.

Useful links

1. <https://www.jemea.org/wp-content/uploads/2022/03/Short-Course-2021-program-in-English.pdf>
2. <https://www.jemea.org/wp-content/uploads/2022/03/Sympo-2021-program-in-English.pdf>
3. <https://www.jemea.org/?lang=en>

About the authors



Kazutoshi Ikenaga is Professor at the Department of Applied Chemistry, Graduate School of Engineering, Sojo University.

He completed a master's course in synthetic chemistry at the Graduate School of Engineering, Kyushu University in 1985. From April in 1985, he worked as an assistant at Kumamoto Institute of Technology (current predecessor), followed by lecturer, assistant professor, and associate professor roles.

He was awarded a doctorate in engineering from Kyushu University in 1991. He has been investigating on organometallic chemistry using silicon compounds until 2000, and has been investigating on microwave-induced depolymerization of plastics since 2001.



Yoshio Nikawa is Professor at the Department of Human Informatics, School of Science and Engineering, Kokushikan University. He received the B.E., M.E. and Ph.D. degrees in electrical engineering from Keio University, Japan, in 1981, 1983, and 1986, respectively. From 1986, he worked as a research associate at The

National Defense Academy followed by a lecturer and associate professor positions. In April 1999, he joined Kokushikan University, as a professor in the Department of Electrical and Electronics Engineering. In April 2007, he moved to the newly established Department of Health and Medical Engineering followed by Department of Human Informatics.

His research activities include microwave and millimeter-wave measurements and applications, microwave and millimeter-wave heating and processing for medical and industrial applications. In 2017 he was awarded the AMPERE Medal.

Ricky's Afterthought:

Are we alone in the Universe? The Search for an Earth-like Exoplanet

A.C. (Ricky) Metaxas

Life Fellow St John's College Cambridge UK

Email: acm33@cam.ac.uk



Early Research

"I have done something wrong" was the repeated mutterings of Didier Queloz a PhD student working at the Observatoire de Haute-Provence in France in 1994 where a special machine was built to his specification for detecting the variations of light from distant objects in our Galaxy. He was working away from his base at the University of Geneva as his supervisor Dr Mayer was on sabbatical at the University of Hawaii. The detector, a new fibre-fed spectrograph termed ELODIE, was observing light emitted from 51 Pegasi, a star in the Pegasus constellation about 50 light years away from Earth. What was puzzling was that the light was not constant and, what is more, every observation was different as though something big was getting in the way of the light being detected. The instrument permitted measurements of radial velocity with an accuracy of 13 m sec^{-1} of stars up to 9 mag (designating the brightness of stars) with an exposure time of <30 mins. Was it possibly an exoplanet, that is, a planet outside our solar system orbiting its companion star and interfering with the light detected in his spectrograph? "No it cannot be" reflected young Didier because researchers had looked for exoplanets since the 1950's and none were found.

He decided to pursue and examine the data further and was convinced that his machine was performing as planned and there was nothing wrong with its design. So after checking and checking again the results, he contacted his supervisor and tentatively suggested that he may have found the first exoplanet, a giant gaseous object orbiting its companion star just over 4 days and being about 8

million km away. (Note for comparison the Earth rotates around the sun every 365.25 days).

When his supervisor returned they checked the data many more times and finally convinced themselves that there was evidence that this was indeed an exoplanet. They presented their results in a meeting in Florence which stunned the astrophysicists attending the meeting and promptly sent a paper to NATURE which was eventually published in the fall in 1995 [1]. Within a short time after the announcement of this discovery, independent observations of the 4.2 day period radial velocity variation was obtained at the Lick Observatory as well as by a joint team at the High Altitude Observatory and the Harvard Smithsonian Centre for Astrophysics.

Was this Jupiter like object orbiting around 51 Pegasi anything like our earth? Obviously not as its temperature was about 1000°C so could not sustain life as we know it. Since this discovery Didier Queloz, now Professor at the Cavendish Lab in Cambridge, discovered many more exoplanets and overall researchers found some 1900 of them in various parts of our galaxy. What is interesting is that most of these planets are very diverse, gas massive super Jupiters, mini Neptunes and other forms.

Nobel Prize and the Cambridge Exoplanet Research Centre

Prof. Queloz, together with his supervisor Michael Mayer and colleague James Peebles, won the 2019 Nobel prize for Physics and is directing a programme at the Cambridge Exoplanet Research Centre to find the equivalent of solar systems using the findings of the European Space Agency's Plato Project, a Space based observatory for searching for planets and due

to be launched in a couple of years. But first Prof. Queloz hopes to have a better opportunity in detecting an earth-like exoplanet using Nasa's James Webb Space Telescope (JWST) which was successfully launched a few months ago.

The JWST is a joint effort with Nasa and Europe's and Canada's Space Agencies. A most complicated task for Nasa's space scientists was the unfolding and stretching out its huge sunshield which was accomplished early this year. Aligning the telescope's 18 primary mirrors will take months to complete. Finally, a mid-course correction burn will be initiated to place the telescope around its final orbit about 1 million miles from earth. Professor Andy Parker Head of the Cavendish Laboratory suggests that there are potentially billions of exoplanets that may be habitable and could take us closer to answering the fundamental question as to whether we are alone in the Universe.

Statement by Lord Rees

Professor Lord Martin Rees, Astronomer Royal and Emeritus Professor of Cosmology and Astrophysics at the University of Cambridge stated:

"Jim Peebles played a key role back in 1965 in appreciating and interpreting the 'cosmic microwave background' radiation – the 'afterglow of creation' [2]. He has been the most influential and respected leader of empirical cosmology with a sustained record of achievement spanning half a century. The study of exoplanets is perhaps the most vibrant field of astronomy. We now know that most stars are orbited by retinues of planets; there may be a billion planets in our galaxy resembling the Earth (similar in size and at a distance from their parent star where liquid water can exist). This takes us a step towards the fascinating question of detecting evidence for life on the nearest of these exoplanets. Queloz and Mayor not only discovered the first planet orbiting an ordinary star, they are also among the leaders in the ongoing research that has led to the discovery of many thousands of other planetary systems, exhibiting an unexpected variety. These awards seem to show, incidentally, a welcome broadening of the Nobel criteria. In the past, astronomy has been included primarily when the discovery involves some new physics (neutron stars, gravitational waves, vacuum energy, etc). But this award

highlights astronomy as among the grandest of the environmental sciences. And the award to Peebles will be welcomed by his friends and colleagues as recognition of a lifetime of sustained contributions and insights by an acknowledged intellectual leader, rather than a 'one off' achievement."

IPLU

The Leverhume Trust [3] has awarded a £10 million grant to establish a new research centre dedicated to exploring the nature and extent of life in the universe and to compliment the research carried out at the Cambridge Exoplanet Research Centre. The university has recently launched the Initiative for Planetary Science and Life in the Universe (IPLU) for cross disciplinary research on planetology.

The centre will include researchers from Cambridge's Cavendish Laboratory, Department of Earth Sciences, Yusuf Hamied Department of Chemistry, Department of Applied Mathematics and Theoretical Physics, Institute of Astronomy, Department of Zoology, Department of History and Philosophy of Science, Faculty of Divinity, and the MRC Laboratory of Molecular Biology. It will also collaborate with researchers at the University of Colorado Boulder (USA), University College London, ETH Zurich (Switzerland), Harvard University (USA) and the Centre of Theological Inquiry in Princeton, New Jersey (USA).

Professor Queloz comments: "The (IPLU) Centre will act as a catalyst for the development of our vision to understanding life in the universe through a long-term research programme that will be the driving force for international coordination of research and education."

For further reading

1. Michel Mayor & Didier Queloz, A Jupiter-mass companion to a solar-type star, *Nature*, **378**, 355–359 (1995). <https://doi.org/10.1038/378355a0>
2. AMPERE Newsletter, Issue 72, Afterthought article, March 2012.
3. The Leverhume Trust is a charity that provides funds for research and education. The original funds came after the death in 1925 of Lord Leverhume who bequeathed part of his holdings in his company Lever Brothers for specific trade charities. Five years after his death his company, whose main product was soap, joined forces with another company, Margarine Unie, to form Unilever.

*inorganics*

an Open Access Journal by MDPI



Advances in Sonication and Microwave Processing on Inorganics

Guest Editors:

Prof. Dr. Cristina Leonelli

Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia, 41125 Modena, Italy

cristina.leonelli@unimore.it

Dr. Roberto Rosa

Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia, 41125 Modena, Italy

roberto.rosa@unimore.it

Deadline for manuscript submissions:

30 June 2022

Message from the Guest Editors

The Special Issue will focus on the publication of original manuscripts devoted to the most recent advancements in the processing of inorganic materials by means of both ultrasound as well as microwave technology, together with those deriving by the combination of the two techniques.

Microwaves and ultrasounds in inorganic chemistry and material sciences research fields are typically investigated for the synthesis of specific inorganic materials. Indeed, they allow obtaining several advantages and simplifications in the synthetic protocols, as well as peculiar characteristics in the as synthesized products, contributing to making these technologies well fitting in green chemistry, green engineering and process intensification perspectives.

Therefore, manuscripts related to the aforementioned research area are more than welcome. Despite applications in the synthesis of inorganic materials, further applications of these innovative approaches, such as microwave-assisted sintering of inorganic materials, will also be the focus of this Special Issue.



mdpi.com/si/72577

Special Issue

Minutes of 4GCMEA Local Organizing Committee Online Meeting 8th April 2022

The local organizing committee had an online meeting on 8th April 2022 to summarize what has been done during the first season of 2022 and discuss what it is going to be done in the future.

Prof. Kama Huang chaired this online meeting. 10 local organization committee members attended this meeting.

Until now, we have:

1. Distributed the first call for paper with the help of AMPERE, IMPI and JEMEA.
2. Re-negotiated with two SCI-index journals and achieve an agreement to launch special issues for the 4GCMEA. These two journals are:
 - International Journal of Microwave Power and Electromagnetic Energy
 - Chemical Engineering and Processing: Process Intensification
3. Signed contracts with 1 exclusive sponsor, 1 gala dinner sponsor, 1 golden

sponsor and several exhibition sponsors. 5 more potential companies are choosing sponsorship type.

4. Invitation of plenary speakers were undergoing.

A discussion on how to expand the influence of this conference and attract more participants was also conducted. Every attendee gave his/her suggestions. In the future, we would try our effort to invite more well-known experts, high-level exhibitors and conference attendees.

Further information on the upcoming 4GCMEA can be found at the following website: <http://campa.com.cn/>.



A photo of the online meeting

About AMPERE Newsletter

AMPERE Newsletter is published by AMPERE, a European non-profit association devoted to the promotion of microwave and RF heating techniques for research and industrial applications (<http://www.ampereurope.org>).

Call for Papers

AMPERE Newsletter welcomes submissions of articles, briefs and news on topics of interest for the RF-and-microwave heating community worldwide, including:

- Research briefs and discovery reports.
- Review articles on R&D trends and thematic issues.
- Technology-transfer and commercialization.
- Safety, RFI, and regulatory aspects.
- Technological and market forecasts.
- Comments, views, and visions.
- Interviews with leading innovators and experts.
- New projects, openings and hiring opportunities.
- Tutorials and technical notes.
- Social, cultural and historical aspects.
- Economical and practical considerations.
- Upcoming events, new books and papers.

AMPERE Newsletter is an ISSN registered periodical publication hence its articles are citable as references. However, the Newsletter's publication criteria may differ from that of common scientific Journals by its acceptance (and even encouragement) of news in more premature stages of on-going efforts.

We believe that this seemingly less-rigorous editorial approach is essential in order to accelerate the circulation of ideas, discoveries, and contemporary studies among the AMPERE community worldwide. It may hopefully enrich our common knowledge and hence exciting new ideas, findings and developments.

Please send your submission (or any question, comment or suggestion in this regard) to the Editor in Chief in the e-mail address below.

AMPERE-Newsletter Editor in Chief

Roberto Rosa, Department of Sciences and Methods for Engineering, University of Modena and Reggio Emilia, Reggio Emilia, Italy, E-mail: roberto.rosa@unimore.it

Co-Editor

A.C. Metaxas

Editorial Advisory Board

Guido Link, Georgios Dimitrakis

AMPERE Disclaimer

The information contained in this Newsletter is given for the benefit of AMPERE members. All contributions are believed to be correct at the time of printing and AMPERE accepts no responsibility for any damage or liability that may result from information contained in this publication. Readers are therefore advised to consult experts before acting on any information contained in this Newsletter.

AMPERE Newsletter

ISSN 1361-8598

<https://www.ampereurope.org/newsletter/>
