

16th-21st October **2022**

INTERNATIONAL CONFERENCE  
ON FINE PARTICLE MAGNETISM

Venue Yokohama Symposia



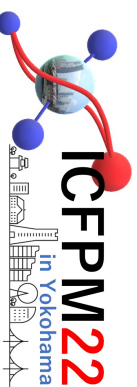
**Programme Book**



## ICFP2022 International Conference on Fine Particle Magnetism, Yokohama

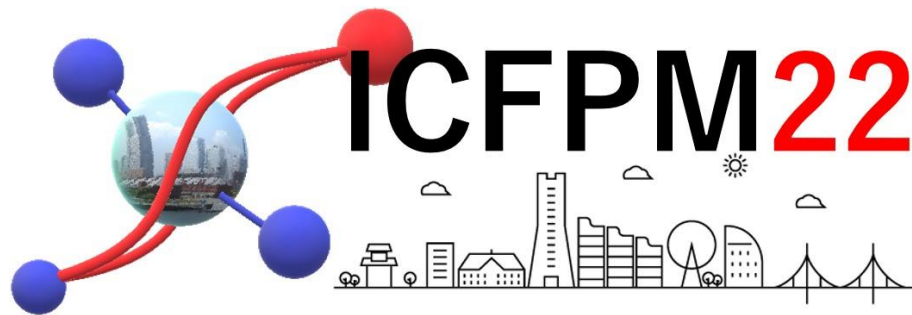
| JST   | EDT   | CEST  | 16th Oct. (Sunday) | 17th Oct. (Monday)                         | 18th Oct. (Tuesday)        | 19th Oct. (Wednesday)      | 20th Oct. (Thursday)                    | 21st Oct. (Friday)         |
|-------|-------|-------|--------------------|--------------------------------------------|----------------------------|----------------------------|-----------------------------------------|----------------------------|
| 9:20  | 20:20 | 2:20  |                    | Opening Address                            | Plenary talk (9:20~10:10)  | Plenary talk (9:20-10:10)  | Plenary talk (9:20-10:10)               | Plenary talk (9:20~10:10)  |
| 9:40  |       |       |                    | Plenary talk (9:40-10:30)                  | C. Frandsen                | A. Lascialfari             | J. Nogués                               | K. Krishnan                |
| 10:10 |       |       |                    | Y. Baba                                    | Short Break(10:10-10:30)   | Short Break(10:10-10:30)   | Short Break(10:10-10:30)                | Short Break(10:10-10:30)   |
| 10:30 | 21:30 | 3:30  |                    | Short Break (10:30-10:50)                  | Invited talk (10:30-11:00) | Invited talk (10:30-11:00) | Invited talk (10:30-11:00)              | Invited talk (10:30-11:00) |
| 10:50 |       |       |                    | Invited talk (10:50-11:20)                 | E. Winkler                 | Y. Iwamoto                 | S. Okamoto                              | S. Nakamae                 |
| 11:00 | 22:00 | 4:00  |                    | P. Morales                                 | E-1 : M. Estrader          | H-1 : F. L. Durhuus        | L-1 : M. Zambach                        | O-1 : J. Rackham           |
| 11:20 |       |       |                    | A-1 : S. Toyokuni                          | E-2 : J. Alonso Masa       | H-2 : W. Muliawan          | L-2 : S. Müssig                         | O-2 : M. Saura-Múzquiz     |
| 11:40 |       |       |                    | A-2 : A. Gallo-Cordova                     | E-3 : M.L. Fdez-Gubieda    | H-3 : Z. Rong              | L-3 : M. Görike                         | O-3 : M. Abdolrahimi       |
| 12:00 | 23:00 | 5:00  |                    | A-3 : U. Wiedwald                          | E-4 : G. Gomide            | H-4 : Y. Hirota            | L-4 : A. López-Ortega                   | O-4 : N. Liu               |
| 12:20 |       |       |                    | A-4 : C. Sangregorio                       | E-5 : G. Varvaro           | H-5 : Carlos Moya          | L-5 : H. Matsui                         | O-5 : D. Sendos            |
| 12:40 |       |       |                    |                                            |                            |                            |                                         | Closing Address            |
| 13:00 | 0:00  | 6:00  |                    | Lunch Break (12:40~14:00)                  | Lunch Break (12:40~14:00)  | Lunch Break (12:40~14:00)  | Lunch Break (12:40~14:00)               | Lunch Break (13:00~14:20)  |
| 14:00 | 1:00  | 7:00  |                    | Invited talk (14:00-14:30)                 | Invited talk (14:00-14:30) | Plenary talk (14:00-14:50) | Invited talk (14:00-14:30)              |                            |
| 14:30 | 1:30  | 7:30  |                    | M. Coisson                                 | S. Disch                   | M. Coey                    | Y. Sasaki                               |                            |
| 14:50 |       |       |                    | B-1 : T. Ogura                             | F-1 : K. Chesnel           |                            | M-1 : C. de J. Fernandez                |                            |
| 15:10 |       |       |                    | B-2 : K. Nomura                            | F-2 : D. Peddis            | I-1 : E. Martín Jefremovas | M-2 : K. Everaert                       |                            |
| 15:30 | 2:30  | 8:30  |                    | B-3 : L. Marciano                          | F-3 : Michael P. Adams     | I-2 : Y. Chen              | M-3 : M. Gich                           |                            |
| 15:50 |       |       |                    | Short Break (15:30-15:50)                  | P1 and Break (15:30-17:10) | I-3 : P. Maltoni           | P2 and Break (15:30-17:10)              | Excursion                  |
| 16:10 |       |       |                    | Registration (15:30-17:30)                 | C-1 : J. Li                | Short Break(15:50-16:10)   |                                         |                            |
| 16:30 | 3:30  | 9:30  |                    | Yokohama Symposia 9F                       | C-2 : T. Nishio            | J-1 : O. Iglesias          | Please send PDF of poster by Oct. 10th. |                            |
| 16:50 |       |       |                    |                                            | C-3 : T. Veile             | J-2 : L. Grütner Hanson    |                                         |                            |
| 17:10 | 4:10  | 10:10 |                    |                                            | C-4 : M. Barčič            | J-3 : J. Leliært           |                                         |                            |
| 17:40 |       |       |                    | Invited talk (17:10-17:40)                 | Invited talk (17:10-17:40) | Invited talk (17:10-17:40) | Invited talk (17:10-17:40)              |                            |
| 18:00 |       |       |                    | F. Pineider                                | V. Salgueiriño             | A. Lappas                  | J.-M. Greneche                          |                            |
| 18:20 |       |       |                    | Welcome reception (18:00-20:00)            | D-1 : K. Takahashi         | K-1 : M. Rivas             |                                         |                            |
| 18:40 |       |       |                    | Yokohama Symposia 2F                       | D-2 : M. Efremova          | K-2 : S. Helbig            | Banquet (18:00-21:00)                   |                            |
| 19:00 |       |       |                    |                                            | D-3 : D. Egea              | K-3 : S. Yang              |                                         |                            |
| 21:00 | 8:00  | 14:00 |                    |                                            | D-4 : T. Ogawa             | K-4 : D. Zákutná           | Royal Hall Yokohama                     |                            |
| 22:30 | 9:30  | 15:30 |                    |                                            |                            |                            |                                         |                            |
|       |       |       |                    | Remote Poster 21:00-22:30<br>oVice VR room |                            |                            |                                         |                            |

|          |                                                                                                                         |
|----------|-------------------------------------------------------------------------------------------------------------------------|
| Any time | Recorded oral presentations and PDF files of poster presentations can be viewed on demand from 16th Oct. till 16th Nov. |
|----------|-------------------------------------------------------------------------------------------------------------------------|



<http://web.apollon.nta.co.jp/icfpm2022>





2022.10.16-21 Yokohama

ICFPM2022

Information and Programme



## Scope of ICFPM

The International Conference on Fine Particle Magnetism (ICFPM) is a series of conferences to provide an opportunity for worldwide participants to meet their colleagues and collaborators and discuss fundamentals and applications of fine magnetic particles since the first ICFPM was in Rome in 1991. The successive conferences were in Bangor (1996), Barcelona (1999), Pittsburg (2002), London (2004), Rome (2007), Uppsala (2010), Perpignan (2013), Gaithersburg (2016), and Gijon (2019).

## Conference Topics

- Synthesis,
- Fundamental properties,
- Theory and modelling,
- Life science and biomedical application
- Characterization and functionalization,
- Experimental techniques,
- Data storage & energy application,

## Social Program

There will be a full program of social events at ICFPM2022. These activities are included in ICFPM2022 registration fee. To help us organize it, please send us an email to notice in case you will not attend Conference dinner.

### Sunday 16th Oct: Welcome reception

The welcome reception will be held in *Café de la Paix* placed on the 2<sup>nd</sup> floor of the same building. The reception will start at 18:00. The delegates will enjoy with beer, wine and some soft drinks with light meal and greet old and new acquaintances.

### Monday 17th Oct : Promotion of young researcher network

We invite all ICFPM2022 participants to attend the event organized to strengthen the networking among young researchers through interaction with senior researchers from different disciplines and also from different countries. The event will be held in the Conference Hall on the 17th (Monday) of October 2022 from 19:00 (7:00 p.m.).

### Wednesday 19th Oct: Inspiring women in science

We invite all ICFPM2022 participants to attend the event organized to inspire women in science by listening to experienced women researchers from our research community. The

event will be held in the Conference Hall on the 19th (Wednesday) of October 2022 from 19:00 (7:00 p.m.).

### Thursday 20th Oct: Banquet / Conference dinner

Banquet starts at 18:00 at the Royal Hall Yokohama (90, Yamashita-cho, Naka-ku, Yokohama-shi). The hall is located approximately 300 m from the conference venue.

### Friday 21st Oct: Excursion / Conference tour

Excursion is scheduled for Friday, soon after the lunch break: Potential tour destinations are Sankeien (三溪園: Traditional Japanese Garden) and Yokohama Landmark Tower, the second highest building in Japan. Details will be made available at the registration desk.

### Coffee Breaks

Currently, it is very hard to serve coffee breaks as usual. We are planning to serve bottled beverages. Free coffee tickets for Doutor Coffee on the 1st floor of the same building will be issued at the conference desk.

### Lunch

Lunches will NOT be provided at the conference venue. There are many restaurants (eating places) in and nearby conference venue. Restaurant maps will be provided and also be found on the registration desk.

## Registration and Information Desk

The registration desk will be located on the same floor as the Conference Venue. The opening hours are as follows:

|                    |                                        |               |
|--------------------|----------------------------------------|---------------|
| Sunday,            | 16 <sup>th</sup> Oct                   | 15:30 – 17:30 |
| Monday - Thursday, | 17 <sup>th</sup> -20 <sup>th</sup> Oct | 8:30 – 17:00  |
| Friday,            | 21 <sup>st</sup> Oct                   | 8:30 – 11:00  |

### On-site registration Fees

|               | Regular    | Students   | Accompanying person |
|---------------|------------|------------|---------------------|
| Standard rate | JPY 85,000 | JPY 50,000 | JPY 25,000          |

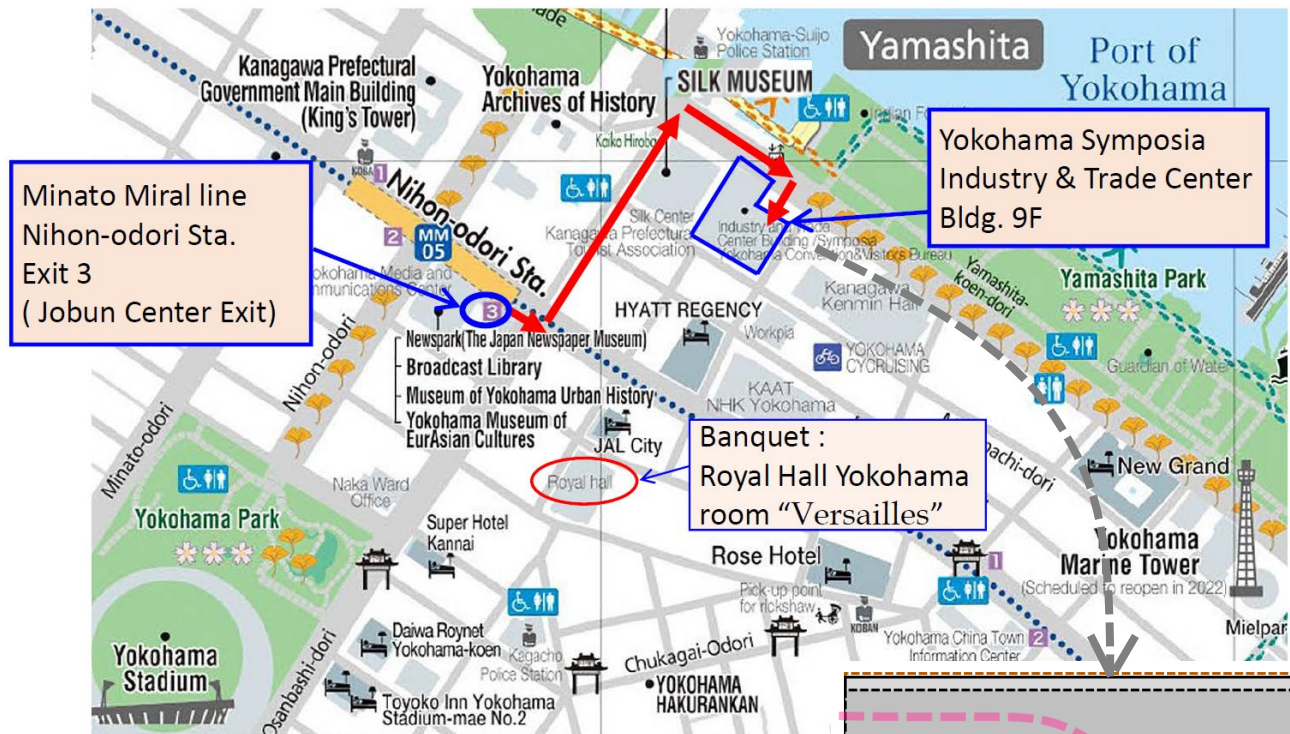
(Cash payments are unavailable)

## Venue

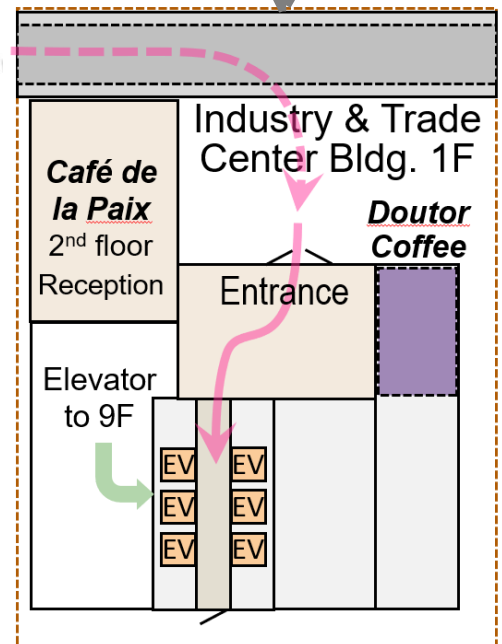
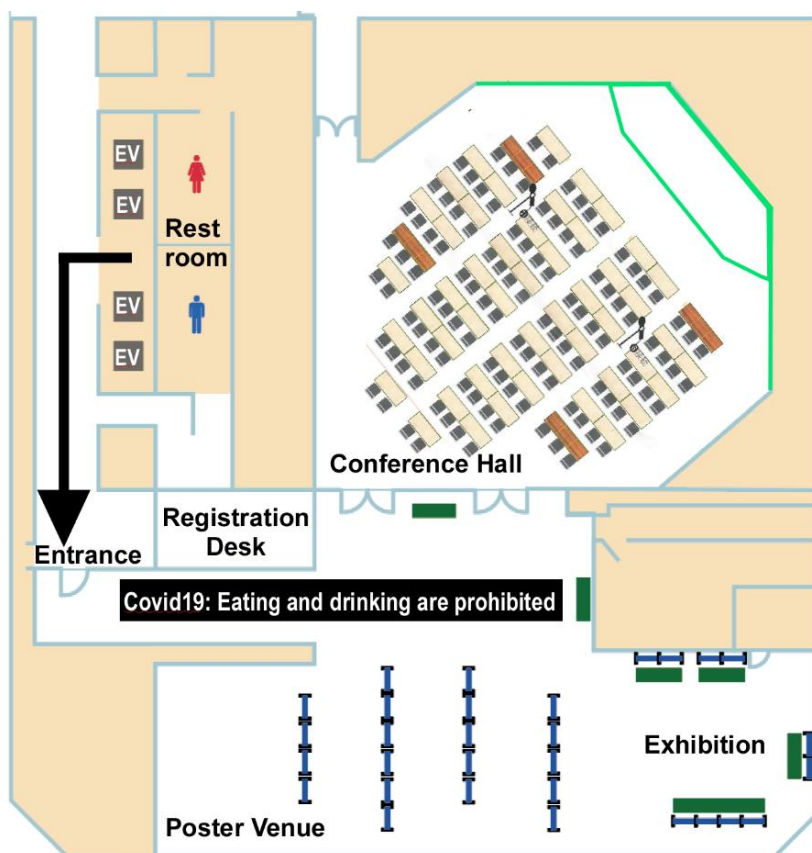
### Yokohama Symposia

Location: 9th floor of Sangyo Boeki Center Building (Industry and Trade Center Building).  
Address : 2, Yamashita-cho, Naka-ku, Yokohama-shi, Kanagawa, Japan

## Map to Yokohama Symposia (Industry & Trade Center Bldg. 9F)



## Floor Map of Conference Site



## Food and Drink Policy

Eating and drinking are not allowed except for bottled water. You cannot bring coffee to Yokohama symposia from the café on the ground floor.

The venue “Yokohama Symposia” has a high formality hall and a spacious foyer from which you can enjoy a fantastic ocean view. It is located in the Yamashita district, which has a history of port opening. Near the venue is a famous park filled with nature called Yamashita Park. Since it is adjacent to Yokohama bay, you can feel the refreshing sea breeze there.

## Internet Service

In the conference site, the following internet service will be provided, however, the bandwidth is not so large. We request the on-site participants to avoid viewing the presentation by the Zoom service simultaneously.

Wi-Fi service:

SSID: symposia

Passwords: Please see the Abstract book

## Information for Participants

### [Onsite attendance]

Come directly to Yokohama Symposia at 9F in Industry & Trade Center, referring to the [access map](http://web.apollon.nta.co.jp/icfpm2022/venue_access.html). ([http://web.apollon.nta.co.jp/icfpm2022/venue\\_access.html](http://web.apollon.nta.co.jp/icfpm2022/venue_access.html).)

We would like to invite the on-site participants to join the selection process for the Best Poster Award. The review board will select the awards from the posters presented at the on-site poster session while referring to the vote results.

### [Remote attendance]

#### 1. Oral Sessions

Log in to the Zoom room from the link in the web program (Passwords will be informed later.)

Use your actual name in the format of “Yuko ICHIYANAGI” as your screen name, so that other participants can recognize you. To ask questions, click “raise hand”. After the chairperson designate you to ask questions, turn on your MICROPHONE and CAMERA. Turn off your MICROPHONE and CAMERA when not necessary.

Presentation times are the same as those for Onsite presentations.

#### 2. Poster Sessions

Log into the oVice during 21:00-22:30, [Japan Standard Time (JST), UTC +9)], 18th Oct. (Tue.) from the link in the web program. (Passwords will be informed later.).

Details of the usage of “oVice” will be posted on the ICFPM web site and/or the information desk.

## Presentation Guide

## Information for Oral Presenters

### [On-site presentations]

Oral presentations can be made using own PC with HDMI input as usual. You may use legacy peripherals of VGA connectors through appropriate adopters. Presentations and discussion must be finished in the presentation time. Please check the revised program in the web program (<http://web.apollon.nta.co.jp/icfpm2022/program.html>).

#### Presentation times

|                            |                                   |
|----------------------------|-----------------------------------|
| Regular oral presentation: | 20 minutes (14 min and 4 min Q&A) |
| Invited presentation:      | 30 minutes (24 min and 5 min Q&A) |
| Plenary Lecture:           | 50 minutes (44 min and 5 min Q&A) |

### [Remote presentations]

Access the Zoom room from the link in the web program (Passwords will be informed later.) and check your CAMERA and MICROPHONE with Conference Staff prior to the beginning of your session. Presentations and discussion must be finished in the presentation time.

All the presentations will be recorded and opened to the participants on the conference website. Please contact us ([icfpm\\_2022@nta.co.jp](mailto:icfpm_2022@nta.co.jp)) if particular circumstances require non-public status.

#### Presentation times

|                            |                                   |
|----------------------------|-----------------------------------|
| Regular oral presentation: | 20 minutes (14 min and 4 min Q&A) |
| Invited presentation:      | 30 minutes (24 min and 5 min Q&A) |

## Information for Poster Presenters

### [Onsite session]

#### 1. Poster Panel

The size of the poster panel is W900 x H1200. Prepare your poster in A0 size (W841 x H1189 mm) portrait style.

#### 2. Set-up/Removal

##### **For onsite poster presenters:**

Set up the poster on the designated poster panel (Designated with Poster Code such as "P1-1") before the session starts (From noon on Monday for P1 and noon on Wednesday for P2) using push pins (provided by the staff on-site). Remove the poster from the panel before 18:30 on the day of your session. Presenters are encouraged to stand by their posters during the session. Posters that remain on the poster panel after the session will be discarded.

##### **For remote poster presenters:**

The Conference Secretariat will print the uploaded A0 size pdf file and post it at the onsite poster board for you.

## [Remote session]

1. All the poster presenters are requested to upload an A0-sized pdf file of the poster via the conference website (<http://web.apollon.nta.co.jp/icfpm2022/index.html>) before 10th Oct. (Mon.) All PDF files will be viewable to the participants on the conference website. Please contact us ([icfpm\\_2022@nta.co.jp](mailto:icfpm_2022@nta.co.jp)) if particular circumstances require non-public status.
2. The remote session will be held in VR space provided by oVice during 21:00-22:30 [Japan Standard Time (JST), UTC +9)], 18th Oct. (Tue.) The Conference Secretariat will set all the PDF posters in the VR space. Presenters are encouraged to stand by their VR posters during the session.  
Details of the usage of “oVice” will be posted on the ICFPM web site and/or the information desk.

## Poster awards

The nomination for the poster award will be from the posters presented on-site. The review board and the audience evaluate the poster presentations based on the research level, poster quality, and presentation clarity. The review board will select the awardees based on the number of votes received from the audience. Award winners will be announced and commended during the Banquet.

## Corona virus protection policy

### COVID-19 Countermeasures

We need to adhere to various regulations concerning infection control. We appreciate the understanding and cooperation of all the participants.

#### [At the entrance]

Whoever has a symptom of fever is not allowed to enter the conference site. The body temperature is monitored at the entrance. Antigen test kits are provided for self-checking. Please ask at the Information Desk.

[Masks] A non-woven mask is mandatory in the venue, except in designated areas and occasions. Non-woven masks are provided at the General Information Desk if you forget to bring your ones.

#### [Disinfection]

The conference site is equipped with various disinfectants and antiseptic solutions. In addition, a pocket hand sanitizer is provided in your conference bag.

#### [No beverage]

No beverage except for bottled water is allowed in the venue.

We sincerely hope all the participants enjoy the conference ICFPM2022 and return home safely.

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Nippon Travel Agency Co., Ltd  
Office hour : 9:30-17:30 (Japan time = UTC+09:00)  
E-mail : icfpm\_2022@nta.co.jp

## Sponsors and Supporters

Host: JSPS KAKENHI Grant Number 20H00344  
Co-Host: Japan Society of Magnetic Fluids Research

## Financial support

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## Publication

Four-page manuscripts will be submitted for publication in the regular issue of IEEE Magnetics Letters. Papers Related to International Conference on Fine Particle Magnetism ICFPM 2022 in IEEE Magnetics Letters

You may submit a five-page (maximum) paper, whether contributed or invited, for publication in IEEE Magnetics Letters (IML) any time before the conference until 31st October 2022. If you are giving an invited talk, your article should not be a review; rather, it should contain mostly new results, as is appropriate for a letters journal. Templates are available at <<https://journals.ieeeauthorcenter.ieee.org/create-your-ieee-journal-article/authoring-tools-and-templates/tools-for-ieee-authors/ieee-article-templates/>>.

The regular editors will manage the review process. If your article is accepted, it will be published on-line, in preprint form, immediately after full peer review and your revisions. Several weeks later, it will appear as fully edited and typeset. Each paper will have its own article number and its own dates of submission and publication. IML is known for providing authors with helpful reviews, excellent copy editing of language, careful preparation of reference lists, and short times from submission to publication.

Accepted articles will have a footnote, "International Conference on Fine Particle Magnetism, Yokohama, Japan, 16th - 21st October 2022." Except for the footnote, the format of your article will be indistinguishable from that of any other IML article. It will not be part of a conference proceedings. There is no charge for regular publication; open-access publication is available for a charge.

The URL for article submission is [here](http://mc.manuscriptcentral.com/maglet-ieee) <<http://mc.manuscriptcentral.com/maglet-ieee>>. In Step 1 of the submission process, please select as the Manuscript Type the subject area closest to that of your article. In Step 3, under Conference-Related Articles, please select ICFPM - International Conference on Fine Particle Magnetism."

**Submission Deadline: 31st October 2022**

# ICFPM2022 Programme

## Plenary Lectures

Monday, 17<sup>th</sup> October

**PL -1** 9:40 -10:30 in Conference Hall

*Nanobiodevices, Quantum Technology, and AI for Future Healthcare*

**Yoshinobu Baba**

Institute of Nano-Life-Systems, Nagoya University, Nagoya, Japan

Tuesday, 18<sup>th</sup> October

**PL -2** 9:20 -10:10 in Conference Hall

*Induction-heated Magnetic Nanoparticles for Catalytic Hydrogen Production*

**Cathrine Frandsen**

Department of Physics, Technical University of Denmark, Lyngby, Denmark

Wednesday, 19<sup>th</sup> October

**PL -3** 9:20 -10:10 in Conference Hall

*Low-frequency Spin Dynamics in Magnetic Nanoparticles : Fundamental Aspects and Biomedical Applications*

**Alessandro Lascialfari**<sup>1,2</sup>

<sup>1</sup>Department of Physics, University of Pavia, and INSTM, Pavia 27100, Italy

<sup>2</sup>National Institute of Nuclear Physics-INFN, Pavia 27100, Italy

**PL -4** 14:00 -14:50 in Conference Hall

*The Puzzles of d-zero Magnetism in Oxide Fine Particles and at Their Surfaces*

**J. M. D. Coey and L. Prendeville**

School of Physics, Trinity College, Dublin 2, Ireland.

Thursday, 20<sup>th</sup> October

**PL -5** 9:20 -10:10 in Conference Hall

*Magnetoplasmonic Nanodomes as a Novel Structure for Biomedical Applications*

**J. Nogués**

Catalan Institute of Nanoscience and Nanotechnology (ICN2), Bellaterra, Spain

Friday, 21<sup>st</sup> October

**PL -6** 9:20 -10:10 in Conference Hall

*Magnetic Particle Imaging: Translating Science and Engineering to Medicine*

**Kannan M. Krishnan**

Department of Materials Sciences & Engineering and Physics, University of Washington, Seattle, USA

# Oral presentation

## Monday 17th Oct

### OPENING ADDRESS

#### Plenary Lecture 1

Chair: **Yuko Ichiyanagi**,  
Yokohama National University, Japan

9:40 -10:30 **PL-1**

*Nanobiodevices, Quantum Technology, and AI for Future Healthcare*

**Yoshinobu Baba**

Institute of Nano-Life-Systems, Nagoya University,  
Nagoya, Japan

SHORT BREAK 10:30 – 10:50

#### SESSION A - Conference Hall

Chair: **Montserrat Rivas**,  
University of Oviedo, Spain

10:50 -11:20 **Invited Talk IT-1**

*Magnetic nanoparticles as a tool for biocatalytic cascades*

Jesús G. Ovejero<sup>1</sup>, Ilaria Armenia<sup>2</sup>, Valeria Grazú<sup>2</sup>,  
**María del Puerto Morales<sup>1</sup>**

<sup>1</sup>Department of Energy, Environmental and Health,  
Instituto de Ciencia de Materiales de Madrid (ICMM-  
CSIC), Sor Juana Inés de la Cruz 3, 28049 Madrid,  
Spain,

<sup>2</sup>BioNanoSurf Group, Instituto de Nanociencia y  
Materiales de Aragon, INMA/CSIC, Edificio I+D,  
Mariano Esquillor Gómez, 50018 Zaragoza, Spain

11:20 -11:40 **A-1**

*Extracellular Fine Fiber-induced Carcinogenesis  
Toward its Prevention and Therapy*

**Shinya Toyokuni<sup>1,2</sup>**

<sup>1</sup>Department of Pathology and Biological Responses,  
Nagoya University Graduate School of Medicine, 65  
Tsurumai-cho, Showa-ku 466-8550, Nagoya, Japan

<sup>2</sup>Center for Low-temperature Plasma Sciences, Nagoya  
University, Furo-cho, Chikusa-ku 464-8603, Japan

11:40 -12:00 **A-2**

*Magnetic Harvesting and Degradation of  
Microplastics using Multicore Iron Oxide  
Nanoparticles*

**Alvaro Gallo-Córdova<sup>1</sup>**, Belén Corrales<sup>2</sup>, Paula  
Cabrero<sup>3</sup>, Jesús G. Ovejero<sup>1</sup>, M. Puerto Morales<sup>1</sup>

<sup>1</sup>Instituto de Ciencia de Materiales de Madrid,  
ICMM/CSIC, 28049 Madrid, Spain.

12:00 -12:20 **A-3**

*From Physical Design to in vitro and in vivo  
Testing of Magnetite and Cobalt Ferrite  
Nanoparticles*

**Ulf Wiedwald**

Faculty of Physics and Center for Nanointegration  
Duisburg-Essen, University of Duisburg-Essen,  
Germany

12:20 -12:40 **A-4**

*Highly Uniform Star Shaped Multifunctional  
Magnetic-plasmonic Au@Fe<sub>3</sub>O<sub>4</sub> Nano-  
Heterostructures*

B. Muzzi<sup>1</sup> M. Albino<sup>2</sup>, A. Omelyanchik<sup>3</sup>, A.  
Gabbani<sup>1,2,4</sup>, E. Kozenkova<sup>3</sup>, M. Petrecca<sup>1,2</sup>, C.  
Innocenti<sup>2</sup>, E. Balica<sup>2</sup>, A. Lavacchi<sup>1</sup>, F. Scavone<sup>6</sup>,  
C. Anceschi<sup>6</sup>, G. Petrucci<sup>4</sup>, A. Ibarra<sup>5</sup>, A.  
Laurenzana<sup>6</sup>, F. Pineider<sup>4</sup>, V. Rodionova<sup>3</sup>, C.  
**Sangregorio<sup>1,2</sup>**

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C.N.R. 50019 Sesto Fiorentino (FI), Italy

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Italy.

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Technology, Immanuel Kant Baltic Federal University,  
236008 Kaliningrad, Russia

<sup>4</sup>Department of Chemistry and Industrial Chemistry &  
INSTM, University of Pisa, 56126 Pisa, Italy.

<sup>5</sup>Laboratorio de Microscopias Avanzadas (LMA),  
Universidad de Zaragoza, 50018- Zaragoza, Spain

<sup>6</sup>Department of Experimental and Clinical Biomedical  
Sciences, University of Florence, 50134 Firenze, Italy

LUNCH BREAK 12:40 – 14:00

#### SESSION B -Conference Hall

Chair: **Ulf Wiedwald**,  
University of Duisburg-Essen, Germany

**14:00 -14:30 Invited Talk IT-2 -**

*Fe-oxide Nanoparticles for Magnetic Hyperthermia: Routes for Determining their Heating Power*

**M. Coïsson**, G. Barrera, F. Celegato, F. Vinai, L. Martino, P. Allia, P. Tiberto  
INRIM, strada delle Cacce 91, 10135 Torino (TO), Italy

**14:30 -14:50 B-1**

*Nanoscale Observation of Fine Particles and Biological Specimens in Aqueous Condition by Scanning-electron Assisted Dielectric Microscopy*

**Toshihiko Ogura**, Tomoko Okada  
Health and Medical Research Institute National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

**14:50 -15:10 B-2**

*Study of Magnetic Particle Discrimination Method Using Difference of Relaxation Time for Magnetic Particle Imaging*

**K. Nomura**<sup>1,2</sup>, M. Washino<sup>1</sup>, T. Matsuda<sup>1</sup>, S. Tonooka<sup>1</sup>, S. Seino<sup>2</sup>, H. Yoshida<sup>2</sup>, K. Nishigaki<sup>2</sup>, T. Nakagawa<sup>2</sup> and T. Kiwa<sup>3</sup>

<sup>1</sup>Advanced Technology R&D Center, Mitsubishi Electric Corp.,

<sup>2</sup>Graduate School of Engineering, Osaka University,

<sup>3</sup>Graduate School of Interdisciplinary Science and Engineering in Health Systems, Okayama University

**15:10 -15:30 B-3**

*Quantifying the magnetic anisotropy of individual nanomagnets embedded in biological entities*

**L. Marcano**<sup>1</sup>, I. Orue<sup>2</sup>, D. Gándia<sup>3</sup>, L. Gandarias<sup>4</sup>, M. Weigand<sup>5</sup>, Radu M. Abrudan<sup>5</sup>, A. García Prieto<sup>6</sup>, A. García-Arribas<sup>3,7</sup>, A. Muela<sup>4</sup>, M. L. Fdez-Gubieda<sup>3,7</sup>, S. Valencia<sup>5</sup>

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<sup>2</sup>SGIker, Universidad del País Vasco - UPV/EHU, 48940 Leioa, Spain, <sup>3</sup>BCMaterials, Bld. Martina Casiano 3rd floor, 48940 Leioa, Spain,

<sup>4</sup>Dpto. Inmunología, Microbiología y Parasitología, UPV/EHU, 48940 Leioa, Spain,

<sup>5</sup>Helmholtz-Zentrum Berlin für Materialien und Energie, Albert-Einstein-Str. 15, 12489 Berlin, Germany,

<sup>6</sup>Dpto. Física Aplicada, UPV/EHU, 48013 Bilbao, Spain,

<sup>7</sup>Dpto. Electricidad y Electrónica, UPV/EHU, 48940 Leioa, Spain

**SHORT BREAK 15:30 – 15:50****SESSION C - Conference Hall**

Chair: **Claudio Sangregorio**,  
University of Florence and INSTM, Italy

**15:50 -16:10 C-1**

*Fabrication and Characterization of Synthetic Antiferromagnetic Nanoplatelets with Perpendicular Magnetic Anisotropy*

**J. Li**<sup>1</sup>, P. van Nieuwkerk<sup>1</sup>, M. A. Verschuuren<sup>2</sup>, B. Koopmans<sup>1</sup> and R. Lavrijsen<sup>1</sup>

<sup>1</sup>Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, Netherlands

<sup>2</sup>SCIL Nanoimprint Solutions, Philips Group Innovation, 5612 AR Eindhoven, Netherlands

**16:10 -16:30 C-2**

*Magnetism of L1<sub>0</sub>-FeNi Films with Island Structures Fabricated by Nitrogen Insertion and Topotactic Extraction Technique*

**Takahiro Nishio**<sup>1</sup>, Hiroaki Kura<sup>1</sup>, Keita Ito<sup>2,3</sup>, Koki Takanashi<sup>2,3,4</sup>, and Hideto Yanagihara<sup>5,6</sup>

<sup>1</sup>Advanced Research and Innovation Center, DENSO CORPORATION, Nisshin, Aichi 470-0111, Japan

<sup>2</sup>Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan

<sup>3</sup>Center for Spintronics Research Network, Tohoku University, Sendai 980-8577, Japan

<sup>4</sup>Center for Science and Innovation in Spintronics, Core Research Cluster, Tohoku University, Sendai 980-8577, Japan

<sup>5</sup>Department of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki 305-8573, Japan

<sup>6</sup>Tsukuba Research Center for Energy Materials Science (TREMS), University of Tsukuba, Tsukuba, Ibaraki 305-8573, Japan

**16:30 -16:50 C-3**

*In-situ Magnetometry of Nanocrystalline Materials at High Temperatures*

**T. Veile**, M. R. Almind, I. Chorkendorff, and C. Frandsen

Department of Physics, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark

**16:50 -17:10 C-4**

*On the In-solution Crystal Growth Condition of CoO and Their Impact on the Magnetic Behavior of the Produced Particles*

**M. Baricic**<sup>1</sup>, D. Hrabovsky<sup>2</sup>, D. Peddis<sup>3</sup>, M. Seydou<sup>1</sup>, S. Ammar-Merah<sup>1</sup>

<sup>1</sup>ITODYS, UMR-CNRS 7086, Université de Paris Cité, 15 Rue Jean Antoine de Baif, 75205 Paris, France

<sup>2</sup>IMPMC, UMR-CNRS 7590, Sorbonne Université, 6 Place Jussieu, 75005 Paris, France

<sup>3</sup>DCCI, Università degli Studi di Genova, Via Dodecaneso, 31, 16146 Genova, Italy

## SESSION D - Conference Hall

Chair: **Marta Estrader**,  
University of Barcelona, Spain

### 17:10 -17:40 Invited Talk IT-3

*Plasmons Interacting with Magnetic Fields: An Application-oriented Perspective in Magnetoplasmonics*

**Francesco Pineider**<sup>1,2,3</sup>

<sup>1</sup> Department of Chemistry and Industrial Chemistry, University of Pisa, Pisa, Italy

<sup>2</sup>Department of Physics and Astronomy, University of Florence, Sesto Fiorentino (FI), Italy

<sup>3</sup>Consorzio INSTM, Florence, Italy

### 17:40 -18:00 D-1

*Synthesis of hcp-Co Nanoparticles From Thermolysis of Cobalt Carbonyl*

**Kyohei Takahashi**, Hiroshi Ito, Isao Kanada and Hiroyuki Matsumoto

Materials Research Center, Technology & IP HQ, TDK Corporation

### 18:00 -18:20 D-2

*Hybrid Iron (oxide) – Gold Nanoparticles: Insights Into Synthesis and Application*

**M.V. Efremova**<sup>1,2</sup>, M. Spasova<sup>3</sup>, V.A. Naumenko<sup>2</sup>, Y.A. Nalench<sup>2</sup>, A.S. Garanina<sup>2</sup>, M.A. Abakumov<sup>2,4</sup>, M. Heidelmann<sup>3</sup>, Z.-A. Li<sup>3</sup>, E. Myrovali<sup>5</sup>, I.V. Schetinin<sup>2</sup>, M. Angelakeris<sup>5</sup>, A.G. Savchenko<sup>2</sup>, M. Farle<sup>3</sup>, A.G. Majouga<sup>2</sup>, N.L. Klyachko<sup>1</sup>, U. Wiedwald<sup>2,3</sup>

<sup>1</sup>Lomonosov Moscow State University, Department of Chemistry, Moscow, Russia,

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<sup>4</sup>Department of Medical Nanobiotechnology, Russian National Research Medical University, Moscow, Russia,

<sup>5</sup>Aristotle University of Thessaloniki, Physics Department, Thessaloniki, Greece

### 18:20 -18:40 D-3

*The Formation Mechanism of Magnetic Iron Oxide Mesocrystals*

**D. Egea**<sup>1</sup>, A. Gallo-Córdova<sup>2</sup>, J. Cuya<sup>3</sup>, D.F. Barber<sup>1</sup>, M.P. Morales<sup>2</sup>, J. Balachandran<sup>3</sup>

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<sup>3</sup>Tohoku University, 6-6-20 Aramaki aza aoba, Aoba-ku, Sendai, 980-8579, Japan

### 18:40 -19:00 D-4

*Fabrication of Columnar structured  $\alpha$ ''-Fe<sub>16</sub>N<sub>2</sub> Nanoparticle Assembly and its Static and Dynamic Magnetic Properties*

**T. Ogawa**<sup>1,2,3,4</sup>, Y. Honnami<sup>1</sup>, Y. Endo<sup>1,3</sup>

<sup>1</sup>Dept. Elec. Eng. Grad. Sch. Eng., Tohoku Univ., Sendai 980-8579, Japan

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<sup>4</sup>Future Materialz Co. Ltd., Tokyo 167-0041, Japan

## Tuesday 18th Oct

### Plenary Lecture 2

Chair: **Òscar Iglesias**,  
Universitat de Barcelona, Spain

### 9:20 -10:10 PL-2

*Induction-heated Magnetic Nanoparticles for Catalytic Hydrogen Production*

**Cathrine Frandsen**

Department of Physics, Technical University of Denmark, Lyngby, Denmark

### SHORT BREAK 10:10 – 10:30

## SESSION E - Conference Hall

Chair: **Francesco Pineider**,  
University of Pisa, Pisa, Italy

### 10:30 -11:00 Invited Talk IT-4

*Optimization of Magnetic Hyperthermia and Catalytic Activity of Multifunctional Nanoparticles*

F. Fabris<sup>1,2</sup>, N. Nuñez<sup>1,2</sup>, A. C. Moreno Maldonado<sup>1,2</sup>, M. Vasquez Mansilla<sup>1,2</sup>, T. E. Torres<sup>1,2</sup>, M. Raineri<sup>2</sup>, H. E. Troiani<sup>3</sup>, D. Tobia<sup>1,2</sup>, G.

F. Goya<sup>4,5,6</sup>, R. D. Zysler<sup>1,2</sup>, E. Lima Jr<sup>1,2</sup> and **E. L. Winkler**<sup>1,2</sup>

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<sup>3</sup>Caracterización de Materiales y Óxidos No-Estequiométricos, Centro Atómico Bariloche, Argentina

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<sup>5</sup>Laboratorio de Microscopías Avanzadas, Universidad de Zaragoza, Zaragoza 50018, Zaragoza, Spain

<sup>6</sup>Dept. Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza 50018, Zaragoza, Spain

**11:00 -11:20 E-1**

*Oxidation Front and Magnetic Gradient in FeO/Fe<sub>3</sub>O<sub>4</sub> Core/shell Nanoparticles Unveiled by a Multicharacterization Approach*

**M. Estrader**<sup>1</sup>, A. G. Roca<sup>2</sup>, A. López-Ortega<sup>3</sup>, R. U. Ichikawa<sup>4</sup>, I. Peral<sup>5</sup>, X. Turrillas<sup>6</sup>, D. del-Pozo-Bueno<sup>7</sup>, M. Varela<sup>8</sup>, F. Peiró<sup>7</sup>, S. Estradé<sup>7</sup> and J. Nogués<sup>2,9</sup>

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<sup>8</sup>Departamento de Física de Materiales e Instituto Pluridisciplinar, Universidad Complutense de Madrid, 28040 Madrid, Spain

<sup>9</sup>ICREA, E-08010 Barcelona, Spain

**11:20 -11:40 E-2**

*Rare Earth (Gd/Tb)-doped Magnetotactic Bacteria: Insight into Their Magnetic Response*

E. M. Jefremovas<sup>1</sup>, L. Gandarias<sup>2</sup>, L. Marcano<sup>3</sup>, 4, A. García-Prieto<sup>5</sup>, I. Orue<sup>6</sup>, A. Muela<sup>2</sup>, M. L. Fdez-Gubieda<sup>5, 7</sup>, L. F. Barquín<sup>1</sup>, and **J. Alonso**<sup>1</sup>

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Santander, Spain

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<sup>6</sup>SGIker Medidas Magnéticas, Universidad del País Vasco (UPV/EHU), 48940 Leioa, Spain

<sup>7</sup>BCMaterials, Basque Center for Materials, Applications and Nanostructures, UPV/EHU, Spain

**11:40 -12:00 E-3**

*Magnetic Shape Anisotropy in Faceted Magnetic Nanoparticles Using Magnetite Nanoparticles Synthesized by Bacteria as Model*

D. Gandia<sup>1</sup>, L. Gandarias<sup>2</sup>, L. Marcano<sup>3,4</sup>, I. Orue<sup>5</sup>, D. Gil-Cartón<sup>6</sup>, J. Alonso<sup>7</sup>, A. García-Arribas<sup>1,4</sup>, A. Muela<sup>2</sup>, **M.L. Fdez-Gubieda**<sup>1,4</sup>

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<sup>6</sup>Structural Biology Unit, CIC bioGUNE, CIBERehd, 48160 Derio, Spain

<sup>7</sup>Depto. CITIMAC, Universidad de Cantabria, 39005 Santander, Spain

**12:00 -12:20 E-4**

*Surface and Size Effects on Coercivity and Magnetic Anisotropy of Polydisperse Nanoparticle Systems*

**Guilherme Gomide**<sup>1</sup>, Rafael Cabreira Gomes<sup>2</sup>, Márcio Gomes Viana<sup>1,3</sup>, Alex Fabiano Cortez Campos<sup>4</sup>, Renata Aquino<sup>4</sup>, Alberto López-Ortega<sup>5,6</sup>, Régine Perzynski<sup>7</sup>, Jérôme Depeyrot<sup>1</sup>

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<sup>3</sup>Instituto Federal de Educação, Ciência e Tecnologia do Piauí, 64500-000 Oeiras, Brazil

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<sup>7</sup>Sorbonne Université, CNRS, Physicochimie des Electrolytes et Nanosystèmes Interfaciaux, F-75005 Paris, France

**12:20 -12:40 E-5**

*Synthetic Antiferromagnetic Multi-stacks for Biomedical Applications*

**G. Varvaro**<sup>1</sup>, S. Laureti<sup>1</sup>, D. Peddis<sup>1</sup>, M. Hassan<sup>1,2</sup>, G. Barucca<sup>2</sup>, P. Mengucci<sup>2</sup>, A.M. Gerardino<sup>3</sup>, E. Giovine<sup>3</sup>, D. Nissen<sup>4</sup>, O. Lik<sup>4</sup>, M. Albrecht<sup>4</sup>

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<sup>3</sup>CNR, Istituto di Fotonica e Nanotecnologie, Via Cineto Romano 42, Roma, 00156, Italy

<sup>4</sup>University of Augsburg, Institute of Physics, Universitätsstraße 1 Nord, D-86159 Augsburg, Germany

**LUNCH BREAK 12:40 – 14:00**

## SESSION F - Conference Hall

Chair: **Javier Alonso Masa**,  
Universidad de Cantabria, Spain

**14:00 -14:30 Invited Talk IT-5**

*Utilizing Small-Angle Scattering to Probe the Structure and Magnetism in Ferrite Nanoparticles*

**Sabrina Disch**

Universität zu Köln, Department für Chemie, Köln, Germany

**14:30 -14:50 F-1**

*Interparticle Magnetic Correlations in Assemblies of Fe<sub>3</sub>O<sub>4</sub> Nanoparticles*

**Karine Chesnel**<sup>1</sup>, Johnathan Rackham<sup>1</sup>, Brittni Newbold<sup>1</sup>, Dalton Griner<sup>1</sup>, Corey Hawkins<sup>1</sup>, Roger Harrison<sup>2</sup>, Alex Reid<sup>3</sup>, Mark Transtrum<sup>1</sup>

<sup>1</sup>Department of Physics & Astronomy, Brigham Young University, Utah, USA

<sup>2</sup>Department of Chemistry & Biochemistry, Brigham Young University, Utah, USA

<sup>3</sup>SIMES, SLAC, CA, USA

**14:50 -15:10 F-2**

*Interplay Between Inter- and Intraparticle Interactions in Bi-magnetic Core/shell Nanoparticles*

Omelyanchik<sup>1</sup>, S. Villa<sup>2</sup>, F. Canepa<sup>3</sup>, G. Singh<sup>4</sup>, M.

Vasilakaki<sup>5</sup>, G. Margaritis<sup>5</sup>, K. N. Trohidou<sup>5</sup> and **D. Peddis**<sup>1,6</sup>

<sup>1</sup>Department of Chemistry and Industrial Chemistry (DCIC), University of Genova, Genova, Italy;

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<sup>5</sup>Istituto di Struttura della Materia, CNR, 00015 Monterotondo Scalo, (RM) Italy

**15:10 -15:30 F-3**

*Atomistic Simulations of the Magnetic Neutron Scattering from Nanoparticles*

**Michael P. Adams**<sup>1</sup>, Andreas Michels<sup>1</sup>, Hamid Kachkachi<sup>2</sup>

<sup>1</sup>Department of Physics and Materials Science, University of Luxembourg, 162A avenue de la Faiencerie, L-1511 Luxembourg, Grand Duchy of Luxembourg

<sup>2</sup>Universite de Perpignan via Domitia, Laboratoire PROMES CNRS UPR8521, Rambla de la Thermodynamique, Tecnosud, F-66100 Perpignan, France

## POSTER SESSION 1 (15:30 – 17:10)

Chair: **Tomoyuki Ogawa**,  
Tohoku University Japan

## SESSION G - Conference Hall

Chair: **Davide Peddis**,  
Istituto di Struttura della Materia, Italy

**17:10 -17:40 Invited Talk IT- 6**

*Nanostructuring Processes to Tune the Magnetic Behaviour of Transition Metal Oxides*

**Verónica Salgueirinho**<sup>1,2</sup>

<sup>1</sup>Departamento de Física Aplicada, Universidade de Vigo, 36310 Vigo (Spain)

<sup>2</sup>CINBIO, Universidade de Vigo, 36310 Vigo (Spain)

**17:40 -18:00 G-1**

*Electron Holographic Measurement of Magnetic Moments of Nanoflowers*

Jes Ærøe Hyllested<sup>1,2</sup>, Miriam Varón<sup>2</sup>, Cathrine Frandsen<sup>2</sup>, **Marco Beleggia**<sup>1,3</sup>

<sup>1</sup>DTU Nanolab, Technical University of Denmark, Kgs. Lyngby, Denmark

<sup>2</sup>DTU Physics, Technical University of Denmark, Kgs.

Lyngby, Denmark

<sup>3</sup>Department of Physics, University of Modena and Reggio Emilia, Modena, Italy

18:00 -18:20 G-2

*Synthesis of Magnetic Nanoparticles Studied by Synchrotron X-ray Spectroscopy*

**Juliusz Kuciakowski**<sup>1,2</sup>, Angelika Kmita<sup>2</sup>, Jan Żukrowski<sup>2</sup>, Marta Gajewska<sup>2</sup>, Sara Lafuerza<sup>3</sup>, Krzysztof Pitala<sup>1,2</sup>, Dorota Koziej<sup>4</sup>, Marcin Sikora<sup>2</sup>

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<sup>2</sup>Academic Centre for Materials and Nanotechnology, AGH University of Science and Technology, Poland

<sup>3</sup>European Synchrotron Radiation Facility, Grenoble, France

<sup>4</sup>Institute for Nanostructure and Solid State Physics, University of Hamburg, Germany

18:20 -18:40 G-3

*3d Metal Doping of Core-shell wüstite@ferrite Nanoparticles as Promising Route Towards Room Temperature Exchange Bias Magnets*

**Beatrice Muzzi**<sup>1,2,3</sup>, Martin Albino<sup>2</sup>, Michele Petrecca<sup>2,3</sup>, Claudia Innocenti<sup>2,3</sup>, César de Julián Fernández<sup>4</sup>, Giovanni Bertoni<sup>4,5</sup>, Clara Marquina<sup>6,7</sup>, M. Ricardo Ibarra<sup>6,7,8</sup>, Claudio Sangregorio<sup>2,3</sup>

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<sup>6</sup>Instituto de Nanociencia y Materiales de Aragón (INMA), Consejo Superior de Investigaciones Científicas (CSIC)-Universidad de Zaragoza, 50009-Zaragoza, Spain

<sup>7</sup>Dpto. de Física de la Materia Condensada, Universidad de Zaragoza, 50009-Zaragoza, Spain

<sup>8</sup>Laboratorio de Microscopias Avanzadas (LMA), Universidad de Zaragoza, 50018- Zaragoza, Spain

18:40 -19:00 G-4

*Defect Driven Magneto-thermal Response of Bi-magnetic Iron-oxide Based Nanoparticles*

**Marianna Vasilakaki**<sup>1</sup>, George Antonaropoulos<sup>2</sup>, Alexandros Lappas<sup>2</sup>, Kalliopi N. Trohidou<sup>1</sup>

<sup>1</sup>Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", 15310 Athens, Greece

<sup>2</sup>Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, Vassilika Vouton, 71110 Heraklion, Greece

## Wednesday 19th Oct

### Plenary Lecture 3 - Conference Hall

Chair: **César de Julián Fernández**,  
I.M.E.M. - C.N.R., Italy

9:20 -10:10 PL-3

*Low-frequency Spin Dynamics in Magnetic Nanoparticles: Fundamental Aspects and Biomedical Applications*

**Alessandro Lascialfari**<sup>1,2</sup>

<sup>1</sup>Department of Physics, University of Pavia, and INSTM, Pavia 27100, Italy

<sup>2</sup>National Institute of Nuclear Physics-INFN, Pavia 27100, Italy

SHORT BREAK 10:10 – 10:30

### SESSION H - Conference Hall

Chair: **Sabrina Disch**  
Universität zu Köln, Germany

10:30 – 11:00 Invited Talk IT-7

*Magnetic Fluid Engineering Applications Developed by Ferrohydrodynamics*

**Yuhiro Iwamoto**

Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya, Aichi, 466-8555, Japan

11:00 -11:20 H-1

*Simulated Clustering Dynamics of Magnetic Nanoparticles*

**Frederik Laust Durhuus**<sup>1</sup>, Marco Beleggia<sup>2</sup>, Cathrine Frandsen<sup>1</sup>

<sup>1</sup>DTU Physics, Technical University of Denmark, Denmark

<sup>2</sup>Department of Physics, University of Modena and Reggio Emilia, Italy

11:20 -11:40 H-2

*Dynamic Magnetization Response of Magnetic Nanoparticles in Ionic Solutions*

**Wibias Muliawan**, Yoshitaka Kitamoto

Department of Materials Science and Engineering,  
Tokyo Institute of Technology, J2-40 4259 Nagatsuta-  
cho, Midori-ku, Yokohama, Kanagawa 226-8503

## SESSION I - Conference Hall

Chair: **Eiji Kita**,  
University of Tsukuba, Japan

### 11:40 -12:00 H-3

*Numerical Analysis of Self-driven Temperature-Sensitive Magnetic Fluid Heat Flow Around Two Cylinders Arranged in Tandem under a Solenoidal Magnetic Field*

**Zhongwu Rong**, Yuhiro Iwamoto, Yasushi Ido  
Department of Electrical and Mechanical Engineering,  
Nagoya Institute of Technology, Japan

### 12:00 -12:20 H-4

*Introduction of Ferrofluids and the Latest Market Applications*

**Yasutake Hirota**, Syohei Asai, Takuya Miyazaki,  
Satomi Fujioka  
Ferrofluid Product Unit, Ferrotec Material Technologies  
Corporation, Tokyo 103-0027, Japan

### 12:20 -12:40 H-5

*An Insight Into the Structural and Magnetic Properties of Maghemite Nanoflowers*

M. Escoda-Torroella<sup>1,2</sup>, **C. Moya**<sup>2,3</sup>, A. Fraile Rodríguez<sup>1,2</sup>, A. Gallo-Cordova<sup>4</sup>, M.P. Morales<sup>4</sup>, A. Labarta<sup>1,2</sup>, and X. Batlle<sup>1,2</sup>

<sup>1</sup> Departament de Física de la Matèria Condensada, Martí i Franquès 1, 08028 Barcelona, Spain.

<sup>2</sup> Institut de Nanociència i Nanotecnologia, Universitat de Barcelona, 08028 Barcelona, Spain.

<sup>3</sup> Université libre de Bruxelles, Engineering of Molecular Nanosystems, 1050 Bruxelles, Belgium.

<sup>4</sup> Instituto de Ciencia de Materiales de Madrid, ICMM/CSIC, 28049 Madrid, Spain.

### LUNCH BREAK 12:40 – 14:00

## Plenary Lecture 4 - Conference Hall

Chair: **Ron Goldfarb**, National Institute of  
Standards and Technology, USA

### 14:00 -14:50 PL-4

*The Puzzles of d-zero Magnetism in Oxide Fine Particles and at Their Surfaces*

**J. M. D. Coey** and L. Prendeville

### 14:50 -15:10 I-1

*Disclosing Crystalline Electric Field and Magnon Excitations in Ensembles of TbCu<sub>2</sub> and NdCu<sub>2</sub> Nanoparticles*

**E. M. Jefremovas**<sup>1</sup>, M. de la Fuente<sup>1</sup>, F. Damay<sup>2</sup>, B. Fåk<sup>3</sup>, A. Michels<sup>4</sup>, J. A. Blanco<sup>5</sup> and L. Fernández Barquín<sup>1</sup>

<sup>1</sup>Dpto. CITIMAC, Facultad de Ciencias, Universidad de Cantabria. 39005 Santander, Spain

<sup>2</sup>Laboratoire Léon Brillouin, CEA-CNRS, 91191 Gif-sur-Yvette Cedex, France

<sup>3</sup>Institut Laue-Langevin, 38042 Grenoble, France

<sup>4</sup>Department of Physics and Material Science, University of Luxembourg, L-1511, Luxembourg

<sup>5</sup>Department of Physics, Universidad de Oviedo, 33007 Oviedo, Spain

### 15:10 -15:30 I-2

*A Machine Learning Based Analysis Method of AC Magnetization Spectra of Magnetic Nanoparticles and Its Application to Magnetic Biosensing*

**Ye Chen**, Konstantinos Slavakis, Yoshitaka Kitamoto

Tokyo Institute of Technology, 4259 Nagatsuta-cho, Midori-ku, Yokohama, Kanagawa 226-8503 Japan

### 15:30 -15:50 I-3

*Magnetic Interactions and Reversal Processes in Ferrites-based Nanostructures*

**Pierfrancesco Maltoni**<sup>1,2</sup>, Gaspare Varvaro<sup>2</sup>, Mery Abdolrahimi<sup>2</sup>, Petra E. Jönsson<sup>3</sup>, Davide Peddis<sup>2,4</sup>, Roland Mathieu<sup>1</sup>

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<sup>3</sup>Department of Physics and Astronomy, Uppsala University, Box 516, 751 20 Uppsala, Sweden

<sup>4</sup>Department of Chemistry and Industrial Chemistry, Università di Genova, Via Dodecaneso 31, 16146 Genova, Italy

### SHORT BREAK 15:50 – 16:10

**SESSION J - Conference Hall**

Chair: **Hannes Raebiger**,  
Yokohama National University, Japan

**16:10 -16:30 J-1**

*Taming the Influence of Dipolar Interactions in Nanoparticle Assemblies for Magnetic Hyperthermia*

**Òscar Iglesias**

Dpt. Física de la Matèria Condensada and IN2UB,  
Facultat de Física, Universitat de Barcelona, Av.  
Diagonal 645, 08028 Barcelona (Spain)

**16:30 -16:50 J-2**

*Towards a Standardized Technique for Measuring the Heating Power of Magnetic Nanoparticles*

**Lise Grüner Hanson**<sup>1</sup>, Bianca Laura Hansen<sup>1</sup>,  
Thomas Veile<sup>1</sup>, Mathias Zambach<sup>1</sup>, Niels Bech  
Christensen<sup>1</sup> and Cathrine Frandsen<sup>1</sup>  
Department of Physics, Technical University of  
Denmark, 2800 Kgs. Lyngby, Denmark

**16:50 -17:10 J-3**

*Homogenization of Heating in Magnetic Hyperthermia Through Exploitation of Magnetisation Dynamics of Interacting Particles*

**J. Leliaert**<sup>1</sup>, J. Ortega-Julia<sup>1,2</sup>, D. Ortega<sup>3,4</sup>

<sup>1</sup>Department of Solid State Sciences, Ghent University,  
Ghent, Belgium

<sup>2</sup>IMDEA Nanoscience, Madrid, Spain

<sup>3</sup>Condensed Matter Physics, University of Cadiz, Cadiz,  
Spain

<sup>4</sup>Institute of Research and Innovation in Biomedical  
Sciences of the Province of Cádiz (INiBICA),  
University of Cadiz, Cadiz, Spain

**SESSION K - Conference Hall**

Chair: **J. Leliaert**, Ghent University, Belgium

**17:10 – 17:40 Invited Talk IT-8**

*Tweaking Nanoscale Magnetism by Vacancy-induced Correlated Disorder*

**Alexandros Lappas**<sup>1</sup>, George Antonaropoulos<sup>1</sup>,  
Marianna Vasilakaki<sup>2</sup>, Kalliopi N. Trohidou<sup>2</sup>,

Vincenzo Iannotti<sup>3</sup>, Milinda Abeykoon<sup>4</sup>, Emil S.  
Bozin<sup>5</sup>

<sup>1</sup>Institute of Electronic Structure and Laser, Foundation  
for Research and Technology - Hellas, Vassilika Vouton,  
71110 Heraklion, Greece

<sup>2</sup>Institute of Nanoscience and Nanotechnology, National  
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Athens, Greece

<sup>3</sup>CNR-SPIN and Department of Physics "E. Pancini",  
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80, 80125 Naples, Italy

<sup>4</sup>Photon Sciences Division, National Synchrotron Light  
Source II, Brookhaven National Laboratory, Upton, NY  
11973, USA

<sup>5</sup>Condensed Matter Physics and Materials Science  
Department, Brookhaven National Laboratory, Upton,  
NY 11973, USA

**17:40 -18:00 K-1**

*Magnetic Nanoclusters Ability to Increase the Sensitivity of Lateral Assays for Pneumococcal Pneumonia Rapid Non-invasive Diagnosis*

María Salvador<sup>1,2</sup>, José Luis Marqués-Fernández<sup>1</sup>,  
Alexander Bunge<sup>3</sup>, José Carlos Martínez-García<sup>1</sup>,  
Rodica Turcu<sup>3</sup>, Davide Peddis<sup>2,4</sup>, María del Mar  
García-Suárez<sup>5</sup>, María Dolores Cima-Cabal<sup>5</sup>,  
**Montserrat Rivas**<sup>1</sup>

<sup>1</sup>Department of Physics & IUTA, University of Oviedo,  
Campus de Viesques, 33203 Gijón, Spain

<sup>2</sup>Institute of Structure of Matter – National Research  
Council (CNR), 00016 Monterotondo Scalo (RM),  
Rome, Italy

<sup>3</sup>National Institute for Research and Development of  
Isotopic and Molecular Technologies, 400293 Cluj-  
Napoca, Romania

<sup>4</sup>Department of Chemistry and Industrial Chemistry,  
Università degli Studi di Genova, 16146 Genova, Italy

<sup>5</sup>Escuela Superior de Ingeniería y Tecnología (ESIT),  
Universidad Internacional de la Rioja, UNIR. 26006,  
Logroño, Spain

**18:00 -18:20 K-2**

*The Behavior of Simulated Magnetic Nanoparticles in Hyperthermia Applications*

**Santiago Helbig**<sup>1</sup>, Claas Abert<sup>1,2</sup>, Pedro A.  
Sánchez<sup>1,3</sup>, Sofia S. Kantorovich<sup>1,2,4</sup>, Dieter Suess<sup>1,2</sup>

<sup>1</sup>University of Vienna, Faculty of Physics & VDSP,  
Boltzmanngasse 5, 1090 Vienna, Austria

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Morgenstern-Platz 1, 1090 Vienna, Austria

<sup>3</sup>University of the Balearic Islands, Physics Department,  
07122 Palma de Mallorca, Spain

<sup>4</sup>Ural Federal University, Institute of Mathematics and  
Natural Sciences, Lenin av. 51, 620000 Ekaterinburg,  
Russian Federation

**18:20 -18:40 K-3**

*Analyses and Modulation of Magnetic Relaxation Behaviour of Nanoparticles Under Diverse Interactions During Biosensing*

**Shaomeng Yang**, Yoshitaka Kitamoto  
Department of Materials Science and Engineering,  
Tokyo Institute of Technology, Yokohama, 226-8503,  
JAPAN

**18:40 -19:00 K-4**

*Correlation of the Structural and Magnetic Morphology of Nanoparticles*

M. Gerina, and **D. Zákutná**  
Charles University, Prague, Czech Republic

## Thursday 20th Oct

### Plenary Lecture 5 - Conference Hall

Chair: **Alberto López-Ortega**,  
Universidad Pública de Navarra, Spain

**9:20 -10:10 PL-5**

*Magnetoplasmonic Nanodomes as a Novel Structure for Biomedical Applications*

**J. Nogués**<sup>1</sup>, A. Lafuente<sup>1</sup>, Z. Li<sup>1</sup>, A. Flucksman<sup>2</sup>, A. Aranda-Ramos<sup>3</sup>, A. Lopez-Ortega<sup>4</sup>, A.G. Roca<sup>1</sup>, P. Güell-Grau<sup>1</sup>, J.L. Tajada<sup>1</sup>, L. Pou-Macayo<sup>3</sup>, F. Pi3, S. Lope Piedrafita<sup>3</sup>, M.D. Baro<sup>3</sup>, J. Sort<sup>3</sup>, P. Vavassori<sup>4</sup>, C. Nogués<sup>3</sup>, O. Benny<sup>2</sup>, B Sepulveda<sup>5</sup>  
<sup>1</sup>Catalan Institute of Nanoscience and Nanotechnology (ICN2), Bellaterra, Spain

<sup>2</sup>Institute for Drug Research, The Hebrew University of Jerusalem, Jerusalem, Israel

<sup>3</sup>Universitat Autònoma de Barcelona, Bellaterra, Spain

<sup>4</sup>CIC nanoGUNE, Donostia-San Sebastian, Spain

<sup>5</sup>Instituto de Microelectrónica de Barcelona (IMB-CNM, CSIC). Bellaterra, Spain

**SHORT BREAK 10:10 – 10:30**

### SESSION L - Conference Hall

Chair: **Sawako Nakamae**,  
Université Paris Saclay, France

**10:30 – 11:00 Invited Talk IT-9**

*Approaches of Ultra-low Iron Loss in Magnetic Materials and Devices for Power Electronics*

**Satoshi Okamoto**<sup>1,2,3</sup>

<sup>1</sup>IMRAM, Tohoku University, <sup>2</sup>CSIS, Tohoku University, <sup>3</sup>National Institute for Materials Science

**11:00 -11:20 L-1**

*Superparamagnetic Particles for Micro-inductor Applications*

**M. Zambach**<sup>1</sup>, M. Beleggia<sup>2,3</sup>, Z. Ouyang<sup>4</sup>, M. Knaapila<sup>5</sup> and C. Frandsen<sup>1</sup>

<sup>1</sup>DTU Physics, Technical University of Denmark, Kgs. Lyngby, Denmark

<sup>2</sup>DTU Nanolab, Technical University of Denmark, Kgs. Lyngby, Denmark

<sup>3</sup>Department of Physics, University of Modena and Reggio Emilia, Modena, Italy

<sup>4</sup>DTU Electro, Technical University of Denmark, Kgs. Lyngby, Denmark

<sup>5</sup>Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway

**11:20 -11:40 L-2**

*Supraparticles as Identification Taggants with Spectral Magnetic Readout*

**Stephan Müssig**<sup>1</sup>, Karl Mandel<sup>1,2</sup>

<sup>1</sup>Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany

<sup>2</sup>Fraunhofer Institute for Silicate Research ISC, Würzburg, Germany

**11:40 -12:00 L-3**

*Synthesis and Modification of Magnetic Nanoparticles and Their Processing to Thin Films for Data Storage*

**Marion Görke**<sup>1</sup>, Georg Garnweitner<sup>1,2</sup>

<sup>1</sup>Technische Universität Braunschweig, Institute for Particle Technology, Volkmaroder Str. 5, 38104 Braunschweig, Germany

<sup>2</sup>Technische Universität Braunschweig, Laboratory for Emerging Nanometrology, Langer Kamp 6A, 38106 Braunschweig, Germany

**12:00 -12:20 L-4***Hardening of Magnetic Nanoparticles by Solvent-mediated Local Strain Release***A. López-Ortega<sup>1,2</sup>**, B. Muzzi<sup>3,4</sup>, E. Lottini<sup>4</sup>, N. Yaacoub<sup>5</sup>, D. Peddis<sup>6</sup>, G. Bertoni<sup>7</sup>, C. de Julián Fernández<sup>7</sup>, C. Sangregorio<sup>3,4</sup><sup>1</sup>Departamento de Ciencias, Universidad Pública de Navarra, E-31006 Pamplona, Spain<sup>2</sup>Institute for Advanced Materials and Mathematics, Universidad Pública de Navarra, E-31006 Pamplona, Spain<sup>3</sup>ICCOM – CNR, I-50019 Sesto Fiorentino (FI), Italy<sup>4</sup>Department of Chemistry “U. Schiff”, University of Florence and INSTM, I-50019 Sesto Fiorentino (FI), Italy<sup>5</sup>IMMM, Université du Mans, CNRS UMR-6283, F-72085 Le Mans, France<sup>6</sup>Department of Chemistry and Industrial chemistry, University of Genoa, I-16146 Genova, Italy<sup>7</sup>IMEM – CNR, I-43124 Parma, Italy**12:20 -12:40 L-5***Brownian Motion of Iron Oxide Nanocages Induced by Alternating Magnetic Fields and Its Application for Efficient siRNA Delivery*Min A Kang<sup>1,2</sup>, Justin Fang<sup>1,3</sup>, Aloka Paragodaarachchi<sup>1,3</sup>, Keita Kodama<sup>4</sup>, Daniela Yakobashvili<sup>1</sup>, Yuko Ichiyanagi<sup>4</sup>, **Hiroshi Matsui**<sup>1,2,3,5</sup><sup>1</sup>Department of Chemistry, Hunter College, City University of New York, 695 Park Avenue, New York, NY 10065 (USA)<sup>2</sup>Ph.D. Program in Biochemistry, The Graduate Center of the City University of New York, New York, NY 10016 (USA)<sup>3</sup>Ph.D. Program in Chemistry, The Graduate Center of City University of New York, New York, NY 10016 (USA)<sup>4</sup>Department of Physics, Graduate School of Science and Engineering, Yokohama National University, Yokohama, Kanagawa, 240-8501 (Japan)<sup>5</sup>Department of Biochemistry, Weill Cornell Medical College, 413 East 69th Street, New York, NY 10021 (USA)**LUNCH BREAK 12:40 – 14:00****SESSION M - Conference Hall****Chair: Jeyadevan Balachandran,**  
Tohoku University, Japan**14:00 – 14:30 Invited Talk IT-10***Development of Magnetically Driven Exosome Delivery System for Biomedical Applications***Yoshihiro Sasaki<sup>1</sup>**, Ryosuke Mizuta<sup>1</sup>, Kiyofumi Katagiri<sup>2</sup>, Kazunari Akiyoshi<sup>1</sup><sup>1</sup>Department of Polymer Chemistry, Graduate School of Engineering, A3-317, Kyoto University, Katsura, Nishikyo-ku, Kyoto 615-8510, Japan<sup>2</sup>Department of Applied Chemistry, Graduate School of Engineering, Hiroshima University, 1-4-1 Kagamiyama, Higashi-Hiroshima, 739-8527, Japan**14:30 -14:50 M-1***Unravelling the High Coercive Field of Cobalt Ferrite Nanoparticles***C. de Julián Fernández<sup>1</sup>**, A. López-Ortega<sup>2</sup>, B. Muzzi<sup>3,4</sup>, E. Lottini<sup>3</sup>, D. Peddis<sup>5,6</sup>, G. Bertoni<sup>7</sup>, C. Sangregorio<sup>3,4</sup><sup>1</sup>I.M.E.M. - C.N.R., I-43124 Parma, Italy<sup>2</sup>Departamento de Ciencias, Universidad Pública de Navarra, E-31006 Pamplona, Spain<sup>3</sup>I.C.C.O.M. - C.N.R., I-50019 Sesto Fiorentino (FI), Italy<sup>4</sup>Dept. of Chemistry “U. Schiff”, University of Florence and INSTM, I-50019 Sesto Fiorentino (FI), Italy<sup>5</sup>Dip. di Chimica e Chimica Industriale, Università di Genova, Via Dodecaneso 31, I-16146, Genova, Italy<sup>6</sup>I.S.M.-C.N.R., I-00015, Monterotondo Scalo (RM), Italy<sup>7</sup>C.N.R. – Istituto Nanoscienze, I-41125 Modena**14:50 -15:10 M-2***Influence of Temperature on Thermal Noise of Magnetic Nanoparticles***Katrijn Everaert<sup>1,2</sup>**, Bartel Van Waeyendbergh<sup>1</sup>, Frank Wiekhorst<sup>2</sup>, Jonathan Leliaert<sup>1</sup><sup>1</sup>Department of Solid State Sciences, Ghent University, Krijgslaan 281, 9000 Ghent, Belgium<sup>2</sup>Physikalisch-Technische Bundesanstalt, Abbestrasse 2-12, 10587 Berlin, Germany**15:10 -15:30 M-3***The Origin of Large Anisotropy and the Relaxation Effects in  $\epsilon$ -Fe<sub>2</sub>O<sub>3</sub> Nanoparticles*Arnau Romaguera<sup>1</sup>, Javier Herrero-Martín<sup>2</sup>, Naureen Khanam<sup>1</sup>, Zheng Ma<sup>1</sup>, Oscar Fabelo<sup>3</sup>, Jose Luis Garcia-Muñoz<sup>1</sup>, **Martí Gich<sup>1</sup>**<sup>1</sup>Institut de Ciència de Materials de Barcelona(ICMAB-CSIC), Bellaterra, Barcelona, 08193 Spain<sup>2</sup>CELLS-ALBA Synchrotron, Cerdanyola del Vallès, Barcelona, 08290 Spain<sup>3</sup>Institut Laue-Langevin Synchrotron, Grenoble Cédex, 38042, France

**SESSION O - Conference Hall**

Chair: **Hiroaki Mamiya**, National Institute for Materials Science, Japan

**POSTER 2 and BREAK (15:30 – 17:10)**

**POSTER SESSION 2 (15:30 – 17:10)**

Chair: **Ko Mibu**, Nagoya Institute of Technology, Japan

**SESSION N - Conference Hall**

Chair: **Marco Beleggia**, University of Modena and Reggio Emilia, Italy

**17:10 – 17:40 Invited Talk IT-11**

*Structural and Magnetic Properties of Magnetic Nanostructures studied by  $^{57}\text{Fe}$  Mössbauer spectrometry*

**Jean-Marc Greneche**

Institut des Molécules et Matériaux du Mans, UMR CNRS 6283, Le Mans Université 72085 Le Mans Cedex, France

**CONFERENCE BANQUET**

**18:00 - 21:00**

**Friday 21st Oct****Plenary Lecture 6 - Conference Hall**

Chair: **Puerto Morales**, Instituto de Ciencia de Materiales de Madrid, Spain

**9:20 -10:10 PL-6**

*Magnetic Particle Imaging: Translating Science and Engineering to Medicine*

**Kannan M. Krishnan**

Department of Materials Sciences & Engineering and Physics, University of Washington, Seattle, USA

**SHORT BREAK 10:10 – 10:30**

**10:30 – 11:00 Invited Talk IT-12**

*Recent Advancements in Complex Fluids and Ferrofluids Thermoelectric Research*

**S. Nakamae**<sup>1</sup>, M. Beaughon<sup>1</sup>, K. Bhattacharya<sup>1</sup>, C. Filomeno<sup>2,3</sup>, T. Fiuza<sup>1, 2, 3</sup>, M. Kouyaté<sup>2</sup>, C. Riedl<sup>2</sup>, T. J. Salez<sup>1</sup>, M. Sarkar<sup>2</sup>, B. Torres-Bautista<sup>1</sup>, M. Bonetti<sup>1</sup>, G. Demouchy<sup>2,4</sup>, J. Depeyrot<sup>3</sup>, E. Dubois<sup>2</sup>, G. Méridet<sup>2</sup>, R. Perzynski<sup>2</sup>, V. Peyre<sup>2</sup>, and M. Roger<sup>1</sup>

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<sup>2</sup>Sorbonne Université, CNRS, Laboratoire PHENIX, Case 51,4 place Jussieu, F-75005 Paris, France

<sup>3</sup>Grupo de Fluidos Complejos, Instituto de Física & Instituto de Química, Universidade de Brasília, CP 04478, 70904-970 Brasília (DF), Brazil

<sup>4</sup>Université Cergy-Pontoise, département de la Physique 33 Bd du port, F-95011, Cergy-Pontoise Cedex, France

**11:00 -11:20 O-1**

*Dynamics of Magnetic Fluctuations in Assemblies of 5 nm Magnetite Nanoparticles Throughout Superparamagnetic Blocking Transition Probed via XPCS*

**Johnathon Rackham**<sup>1</sup>, Claudio Mazzoli<sup>2</sup>, Karine Chesnel<sup>3</sup>

<sup>1</sup>Department of Physics and Astronomy, Brigham Young University, Provo, UT, 84602, USA

<sup>2</sup>NSLS-II, Brookhaven National Laboratory, Upton, NY 11973

**11:20 -11:40 O-2**

*Magnetism, Structure, and Local Order in  $\text{Bi}_3\text{FeMo}_2\text{O}_{12}$  Nanoparticles*

**Matilde Saura-Múzquiz**<sup>1,2</sup>, Frederick Marlton<sup>2</sup>, Bryce Mullens<sup>2</sup>, Jiayu Liu<sup>2</sup>, Thomas Vogt<sup>3</sup>, Helen Maynard-Casely<sup>4</sup>, Maxim Avdeev<sup>4</sup> and Brendan J. Kennedy<sup>2</sup>

<sup>1</sup>Dpto Física de Materiales, Universidad Complutense de Madrid, 28040 Madrid, Spain

<sup>2</sup>School of Chemistry, University of Sydney, Sydney, NSW, 2006, Australia

<sup>3</sup>Department of Chemistry & Biochemistry, University of South Carolina, Columbia, SC 29208

<sup>4</sup>Australian Centre for Neutron Scattering, ANSTO, Lucas Heights NSW 2234, Australia

LUNCH BREAK (13:10 – 14:30)

11:40 -12:00 O-3

EXCURSION

*Magnetic and XAS Investigations of Magnetic Zeolite Synthesis from Polluted Mt. Etna Volcanic Ash*

**Maryam Abdolrahimi**<sup>1,2</sup>, Claudia Belviso<sup>3</sup>, Carlo Meneghini<sup>1</sup>, Davide Peddis<sup>2,4</sup>

<sup>1</sup>Dipartimento di Scienze, Università degli Studi Roma Tre, 00146 Roma, Italy

<sup>2</sup>Istituto di Struttura della Materia—CNR, 00015 Monterotondo Scalo, Italy

<sup>3</sup>Istituto di Metodologie per l'Analisi Ambientale—CNR, 85050 Tito Scalo, Italy

<sup>4</sup>Departments of Chemistry and Industrial Chemistry (DCIC), Università of Genova, 16146 Genova, Italy

12:00 -12:20 O-4

*Study of the Magnetothermal Properties of ZnMn Ferrite Nanoparticles for Practical Applications of Low-frequency Hyperthermia*

**N.N. Liu**<sup>1</sup>, A.P. Pyatakov<sup>1</sup>, M.N. Zharkov<sup>2</sup>, N.A. Pyataev<sup>2</sup>, G. B. Sukhorukov<sup>3,4</sup>, Y.K. Gunko<sup>5</sup>, A.M. Tishin<sup>1,6</sup>, T. Moriwaki<sup>7</sup>, K. Nakazawa<sup>7</sup>, Y. Ichiyanagi<sup>7</sup>

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<sup>6</sup>AMT&C Group, Promyshlennaya street 4, 108840, Troitsk, Russia

<sup>7</sup>Graduate School of Engineering, Yokohama National University, Yokohama 240-8501, Japan

12:20 -12:40 O-5

*Use of Plant Viruses as a Scaffold for the Construction of New Magnetic Bio-nanomaterials for Biomedical Application*

**Sendos Darwish**<sup>1</sup>, Souad Ammar<sup>2</sup>, Nguyet-Thanh Ha-Duong<sup>2</sup>

<sup>1,2</sup>Université de Paris, ITODYS, CNRS, UMR 7086, 15 Rue J-A de Baïf, F-75013 Paris, France

CLOSING ADDRESS

## Poster Presentation – 1 Tuesday 18th Oct

Chair: **Tomoyuki Ogawa**,  
Tohoku University Japan

### Poster Code: P1-1

*Numerical Study on Magnetization Characteristics of Chainlike Magnetic Nanoparticles*

**Haochen Zhang**, Kazuki Ikeda, Yi Sun, Teruyoshi Sasayama, Takashi Yoshida  
Department of Electrical and Electronic Engineering,  
Kyushu University, Fukuoka 819-0371, Japan

### Poster Code: P1-2

*Quantitative Estimation of Solid and Liquid Phase of Magnetic Nanoparticles Using Magnetization Harmonics*

**S. Yamamura**, Y. Sun, H. Zhang, J. Goto, M. Yasutake, K. Enpuku, T. Yoshida  
Department of Electrical and Electronic Engineering,  
Kyushu University, Fukuoka 819-0371, Japan

### Poster Code: P1-3

*Co-existence of hexagonal close-packed (HCP) and face-centered cubic (FCC) crystal structures Ni nanoparticles embedded in carbonaceous matrices*

**Mona Fadel**, M.P. Fernández-García, Fabian Suarez-Garcia<sup>‡</sup>, F. Julián Martín-Jimeno<sup>‡</sup>, J. H. Belo<sup>Φ</sup>, Alaa Adaw<sup>†</sup>, David Martínez-Blanco<sup>†</sup>, Jesús A. Blanco\*, Pedro Gorria\*, Pablo Álvarez-Alonso\*

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<sup>Φ</sup> IFIMUP-IN, Rua do Campo Alegre, s/n, Porto, Portugal

### Poster Code: P1-4

*Composition and Its Effects on Efficiency of Magnetic Temperature Responsive Catalytic Core-Shell Nanocomposites as Phase Transfer Catalyst*

**Runze Huang**, Yoshitaka Kitamoto  
Department of Materials Science and Engineering,  
Tokyo Institute of Technology, Yokohama, 226-8503, Japan

### Poster Code: P1-5

*Evaluation of AC Magnetic Properties of Fine YIG Ferrite Powder Prepared by Solution Combustion Method*

**N.Ogasawara**<sup>1</sup>, H.Hirazawa<sup>1</sup>, M.Sakamoto<sup>1</sup>, A.Tagashira<sup>1</sup>, U.Enkhnanan<sup>2</sup>, D.Sangaa<sup>2</sup> and H.Aono<sup>3</sup>

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<sup>3</sup>Graduate School of Science and Technology, Ehime University, Matsuyama, 790-8577, Japan

### Poster Code: P1-6

*Heat Generation Ability in an AC Magnetic Field of Sm Substituted Y<sub>3</sub>Fe<sub>5</sub>O<sub>12</sub> Powder Prepared by Solution Combustion Method*

**R.Shinkawa**<sup>1</sup>, H.Hirazawa<sup>1</sup>, M.Sakamoto<sup>1</sup>, A.Tagashira<sup>1</sup>, E.Uyanga<sup>2</sup>, D.Sangaa<sup>2</sup> and H.Aono<sup>3</sup>

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<sup>3</sup>Graduate School of Science and Engineering, Ehime University, Matsuyama 790-8577, Japan

### Poster Code: P1-7

*Understanding the role of Li on magnetic lithium ferrite ceramics*

**C. Granados-Miralles**<sup>1</sup>, A. Serrano<sup>1</sup>, J. López-Sánchez<sup>2</sup>, P. Prieto<sup>3</sup>, J.F. Marco<sup>4</sup>, G. Gorni<sup>5</sup>, J. Guzmán-Mínguez<sup>1</sup>, A. Castellano<sup>6</sup>, A.M. Friedel<sup>7</sup>, J.E. Prieto<sup>4</sup>, J.F. Fernández<sup>1</sup>, A. Quesada<sup>1</sup>

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<sup>6</sup>Instituto de Magnetismo Aplicado (IMA-UCM-ADIF), 28230 Madrid, Spain

<sup>7</sup>Institut Jean Lamour, UMR CNRS 7198 and Université de Lorraine, 54000 Nancy, France

<sup>8</sup>Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, 67663 Kaiserslautern, Germany

**Poster Code: P1-8**

*Crystal structure and magnetic properties of FeCo nitrides prepared by ammonia gas nitridation*

**C. Kodaka**, M. Kishimoto, E. Kita, and H. Yanagihara  
Department of Applied Physics, University of Tsukuba, Ibaraki, 305-8573, Japan

**Poster Code: P1-9**

*Magnetic Hyperthermia Effect of Gd<sup>3+</sup>-doped MnFe<sub>2</sub>O<sub>4</sub> Nanoparticles*

**T. Moriwaki**<sup>1</sup>, K. Aoki<sup>1</sup>, K. Nakazawa<sup>1</sup>, K. Ohara<sup>2</sup>, T. Sakamoto<sup>2</sup>, K. Nii<sup>2</sup>, T. Nakamura<sup>1</sup>, and Y. Ichiyanagi<sup>2</sup>

<sup>1</sup>Department of Natural Env., Graduate School of Env. and Inf. and Sci., Yokohama National University, Yokohama, Kanagawa, Japan

<sup>2</sup>Department of Physics, Graduate School of Engineering, Yokohama National University, Yokohama, Kanagawa, Japan

**Poster Code: P1-11**

*Harmonic Responses of Gd<sup>3+</sup>-doped MnFe<sub>2</sub>O<sub>4</sub> Nanoparticles*

**T. Sakamoto**<sup>1</sup>, K. Ohara<sup>1</sup>, K. Nakazawa<sup>2</sup>, K. Nii<sup>1</sup>, T. Moriwaki<sup>2</sup>, and Y. Ichiyanagi<sup>1</sup>

<sup>1</sup>Grad. Sch. of Sci. and Eng., Yokohama Nat. Univ.,

<sup>2</sup>Grad. Sch. of Environ. and Info., Yokohama Nat. Univ.,

**Poster Code: P1-12**

*Magnetic structural analysis of nanocrystalline soft magnets using small angle neutron scattering*

**Hiroaki Mamiya**<sup>1</sup>, Yojiro Oba<sup>2</sup>, Takayuki Miyatake<sup>3</sup>, Tadakatsu Ohkubo<sup>1</sup>

<sup>1</sup>National Institute for Materials Science

<sup>2</sup>Japan Atomic Energy Agency

<sup>3</sup>Tohoku Magnet Institute

**Poster Code: P1-13**

*Modeling Reduced Retention Time Spin Orbit Torque Random Access Memory for efficient In-Memory Computing*

**Alisha P B**, Tripti S Warriar

Department of Electronics, Cochin University of Science and Technology, Cochin, India

**Poster Code: P1-14**

*Towards Magnetorelaxometry Imaging (MRXI) in Humans: a Head Phantom Study*

**Soudabeh Arsalani**<sup>1</sup>, Patricia Radon<sup>1</sup>, Maik Liebl<sup>1</sup>, Peter Schier<sup>2</sup>, Aaron Jaufenthaler<sup>2</sup>, Daniel Baumgarten<sup>2</sup>, Frank Wiekhorst<sup>1</sup>

<sup>1</sup>Physikalisch-Technische Bundesanstalt, Abbestrasse 2-12, D-10587 Berlin, Germany

<sup>2</sup>Institute of Electrical and Biomedical Engineering, UMIT, Hall in Tirol, Austria

**Poster Code: P1-15**

*Towards Quantitative Imaging of Magnetic Nanoparticles in Torso-Sized Volumes using Nonlinear Magnetorelaxometry*

**Peter Schier**<sup>1</sup>, Aaron Jaufenthaler<sup>1</sup>, Frank Wiekhorst<sup>2</sup>, Daniel Baumgarten<sup>1</sup>

<sup>1</sup>Institute of Electrical and Biomedical Engineering, UMIT TIROL - Private University for Health Sciences, Medical Informatics and Technology, Hall in Tirol, Austria

<sup>2</sup>Metrologie für magnetische Nanopartikel, Physikalisch-Technische Bundesanstalt (PTB), Berlin, Germany

**Poster Code: P1-16**

*Unidirectional Pores Using Magnetic-Nanoparticle-Chain Template*

**Atsuki Kobayashi**, Junpei Sakurai, Hosei Nagano, Seiichi Hata, Chiemi Oka

Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan

**Poster Code: P1-17**

*Evolution of isolated nanoparticles from amorphous NiCu@SiO<sub>2</sub> composite*

**Debashish Patra**<sup>1</sup>, V. Srinivas<sup>1</sup>, B.S. Burgos<sup>2</sup>, J.A. De Toro<sup>2</sup>

<sup>1</sup>Department of Physics, Indian Institute of Technology Madras, Chennai-600 036

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**Poster Code: P1-18**

*Microstructure and magnetic properties of medium entropy AlNiCo alloy*

**Raghavendra Kulkarni**<sup>1, 4</sup>, B.S. Murty<sup>2, 3</sup> and V. Srinivas<sup>1</sup>

<sup>1</sup>Department of Physics, Indian Institute of Technology Madras, Chennai-600036, India

<sup>2</sup>Department of Metallurgical and Materials Engineering Indian Institute of Technology Madras, Chennai-600036, India

<sup>3</sup>Department of Materials Science and Engineering, I.I.T, Hyderabad-502285, India

<sup>4</sup>Department of H & S, CVR College of Engineering, Hyderabad, India

#### Poster Code: P1-19

*Tuning of magnetic interactions in Fe<sub>3</sub>O<sub>4</sub> nanocomposites*

**Anamika Ghosh**<sup>1,2</sup>, V Srinivas<sup>2</sup>, S Ramaprabhu<sup>1</sup>

<sup>1</sup>Alternative energy nanotechnology laboratory (AENL), Department of Physics, Chennai-600036

<sup>2</sup>Department of physics, Chennai-600036

#### Poster Code: P1-20

*Correlation of energy-resolved magnetic circular dichroism spectra with the perpendicular magnetic anisotropy of TmIG*

**Hsiu-An Liu**, Wan-Hsiu Chang Chien, Hua-Shu Hsu

Department of Applied Physics, National Pingtung University, No. 4-18, Minsheng Road, 900391 Pingtung City, Taiwan, R.O.C.

#### Poster Code: P1-21

*Effect of Median Size on Magnetic Properties of Submicron-sized Amorphous Fe-B Spherical Particles Synthesized by A Liquid-phase Reduction Method*

**Y. Endo**<sup>1,2</sup>, K. Murata<sup>1</sup>, K. Wakabayashi<sup>1</sup>, T. Miyazaki<sup>3</sup>, H. Masumoto<sup>4</sup>

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<sup>4</sup>Frontier Research Institute for Interdisciplinary Sciences, 6-3 Aoba, Aramaki, Aoba-ku, Sendai 980-8578, Japan

#### Poster Code: P1-22

*Experimental and theoretical investigation of Insulator-Metal Transition and Colossal Magnetoresistance in La<sub>0.4</sub>Ca<sub>0.4</sub>Ag<sub>0.2</sub>MnO<sub>3</sub> polycrystal*

**S. Slimani**<sup>1,2</sup>, A. Bajorek<sup>3</sup>, M. Dulski<sup>4</sup>, J. Goraus<sup>3</sup>, A. Mabrouki<sup>2</sup>, M. Smari<sup>2</sup>, D. Peddis<sup>1</sup> and E. Dhahri<sup>2</sup>

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#### Poster Code: P1-23

*Experimental studies and micromagnetic modeling in the crystalline/amorphous nanocomposite*

**S. Slimani**<sup>1,3,4</sup>, G. Concas<sup>2</sup>, F. Congiu<sup>2</sup>, G. Barucca<sup>5</sup>, N. Yaacoub<sup>6</sup>, A. Talone<sup>4,7</sup>, M. Smari<sup>3</sup>, E. Dhahri<sup>3</sup>, D. Peddis<sup>1,4</sup>, G. Muscas<sup>2</sup>

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<sup>7</sup>Università degli Studi 'Roma Tre', Dipartimento di Scienze, Roma, Italy

#### Poster Code: P1-24

*Photoemission images of magnetic domains of Co thin films*

**Ken-ichi Shudo**<sup>1,2</sup>, Takumi Okabe<sup>2</sup>, Shigeru Masuda<sup>1,3</sup>

<sup>1</sup>Faculty of Engineering/Science, Yokohama National University, Japan

<sup>2</sup>Graduate School of Engineering/Science, Yokohama National University, Japan

<sup>3</sup>Graduate School of Arts and Science, University of Tokyo, Japan.

**Poster Code: P1-25**

*Magnetic Relaxation of Superparamagnetic Fe Oxide Particle Studied with Mössbauer Spectroscopy*

**Eiji Kita**<sup>1</sup>, Reisho Onodera<sup>2</sup>, Mikio Kishimoto<sup>1</sup>, Hideto Yanagihara<sup>1</sup>

<sup>1</sup>Department of Applied Physics, University of Tsukuba, Ibaraki 305-8573, Japan

<sup>2</sup>National Institute of Technology, Ibaraki College, Hitachinaka, Ibaraki 312-8508, Japan

**Poster Code: P1-26**

*Novel theoretical prediction of physical properties of  $Mn_{n+1}SiC_n$  ( $n=1, 2$  and  $3$ ): ab-initio calculations*

**Fouâd Keramsi**<sup>1</sup>, Moued Mebrek<sup>2,3</sup>, Mohamed Berber<sup>2,3</sup>

<sup>1</sup>Département de Physique, Institut des Sciences de la Nature et de Vie & Sciences Exactes (SNV-SE), Université Ahmed ZABANA de Relizane, 48000 Relizane, Algeria

<sup>2</sup>Centre Universitaire Nour Bachir El Bayadh, 32000 El Bayadh, Algeria

<sup>3</sup>Laboratoire d'Instrumentation et Matériaux Avancés, Centre Universitaire Nour Bachir El-Bayadh, BP 900 route, 32000 Aflou, Algérie

**Poster Code: P1-27**

*Magnetization Properties and Local Structure Analysis of Diluted Magnetic Semiconductor  $Zn_{1-x}Gd_xO$  Nanoparticles*

**Kazune Nii**<sup>1</sup>, Kota Aoki<sup>2</sup>, Kentaro Ohara<sup>1</sup>, Kenta Nakazawa<sup>2</sup>, Takeshi Sakamoto<sup>1</sup>, Tomomasa Moriwaki<sup>2</sup>, and Yuko Ichiyanagi<sup>1\*</sup>

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**Poster Code: P1-28**

*Vortex Stability and Field-driven Magnetic Phase Diagram of Square Shaped Fe Thin Films with Nanometric Dimensions*

**Johans Restrepo** and Mauricio Galvis  
Group of Magnetism and Simulation. University of Antioquia, A.A. 1226, Medellín, Colombia

**Poster Code: P1-29**

*In Search of an alternative to MgO as a spacer layer in a Heusler alloy based Magnetic Tunneling Junction : A DFT study*

**Joydipto Bhattacharya**<sup>1,2</sup>, Aparna Chakrabarti<sup>1,2</sup>

<sup>1</sup>Raja Ramanna Centre for Advanced Technology, Indore 452013, India

<sup>2</sup>Homi Bhabha National Institute, Training School Complex, Anushakti Nagar, Mumbai 400094, India

**Poster Code: P1-30**

*Tuning the magneto-optical effect of TmIG by chiral molecular adsorption*

**Bo-Hao Chen**, Hsiu-An Liu, Yu Ying Chang, Hua-Shu Hsu

Department of Applied Physics, National Pingtung University, No. 4-18, Minsheng Road, 900391 Pingtung City, Taiwan, R.O.C.

**Poster Code: P1-31**

*Study on tunnel spin-filtering effect using perpendicularly magnetized insulative cobalt ferrite thin films grown on conductive cobalt ferrite electrodes*

**M. Morishita**<sup>1</sup>, M. Furuta<sup>1</sup>, T. Ichikawa<sup>1</sup>, M. A. Tanaka<sup>1</sup>, Y.-M. Hung<sup>2</sup>, S. Honda<sup>3</sup>, T. Ono<sup>2</sup>, and K. Mibu<sup>1</sup>

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<sup>3</sup>Department of Pure and Applied Physics, Kansai University, Suita, Osaka 564-8680, Japan

**Poster Code: P1-32**

*Structural and Magnetic Properties of Mn-N Thin Films Epitaxially Grown on MgO(001) Substrates*

**Kosuke Imamura**<sup>1</sup>, Ryota Kuwayama<sup>1</sup>, Mitsuru Ohtake<sup>1</sup>, Shinji Isogami<sup>2</sup>, Masaaki Futamoto<sup>1</sup>, Kawai Tetsutoh<sup>1</sup>, Fumiyoshi Kirino<sup>3</sup>, and Nobuyuki Inaba<sup>4</sup>

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Yamagata University, 4-3-16 Jyonan, Yonezawa 992-  
8510, Japan

**Poster Code: P1-33**

*Influences of Substrate Temperature on the  
Structural and Magnetostrictive Properties of  
Fe<sub>50</sub>Co<sub>50</sub> Alloy Single-Crystal Film*

**Yuta Nakamura**<sup>1</sup>, Mitsuru Ohtake<sup>1</sup>, Kana  
Serizawa<sup>1</sup>, Tetsuroh Kawai<sup>1</sup>, Masaaki Futamoto<sup>1</sup>,  
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8510, Japan

**Poster Code: P1-34**

*Influence of growth conditions on the structure and  
magnetic properties of magnetron sputtered  
CoFeB alloy films*

**Neha Gupta**<sup>1,2</sup>, Dileep Kumar<sup>3</sup>, Mukul Gupta<sup>3</sup>,  
S.K. Rai<sup>1</sup> and Pooja Gupta<sup>1,2</sup>

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Complex, Anushakti Nagar, Mumbai 400094, India

<sup>3</sup>UGC-DAE Consortium for Scientific Research,  
Khandwa Road, Indore 452017, India

**Poster Code: P1-36**

*Correlation between Pulsed Laser Energy and  
magnetic property of BiFeO<sub>3</sub> thin films*

**Shiva Lamichhane**<sup>1</sup>, Arijit Chowdhuri<sup>2</sup>, Monika  
Tomar<sup>3</sup>, Savita Sharma<sup>4</sup>

<sup>1</sup>Department of Physics and Astrophysics, University of  
Delhi, Delhi-110007, India

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Delhi, Delhi-110007, India

<sup>4</sup>Physics Department, Kalindi College, University of  
Delhi, Delhi-110008, India

**Poster Code: P1-37**

*Measurement of capacitance of an electric double  
layer on porous YBCO electrode*

**Yoshihiro Shimazu**

Department of Physics, Yokohama National University,  
Yokohama 240-8501, Japan

**Poster Code: P1-38**

*Passivation of Surface Defects on Colloidal CuInS<sub>2</sub>  
Nanoparticles via Post-Synthetic Ligand Exchange*

**Koichiro Suzuki**<sup>1</sup>, Takahiro Seto<sup>1</sup>, Tomoya Naka<sup>1</sup>,  
Yasushi Hamanaka<sup>1</sup>, Toshihiro Kuzuya<sup>2</sup>

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ku, Nagoya 466-8555, Japan

<sup>2</sup>Muroran Institute of Technology, Mizumoto-cho,  
Muroran 050-8585, Japan

**Poster Code: P1-39**

*Fabrication of oxide nanostructures of glass  
additive elements on the surface of waste glass*

**Tatsumi Naganuma**<sup>1</sup>, Toshihiro Kuzuya<sup>1</sup>,  
Hisayoshi Matsushima<sup>2</sup>, Ken Sawada<sup>1</sup>, Naoya  
Sawaguchi<sup>1</sup>, Akira Sato<sup>3</sup>

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Obihiro city 080-2461, Japan

## Poster Presentation - 2 Thursday 20th Oct

Chair: **Ko Mibu**, Nagoya Institute of Technology, Japan

### Poster Code: P2-1

*Micro Particle Manipulation with Electrokinetic of Counter Needle Electrodes for Cell Therapy*

**Hitoshi Inabe**, Hiromichi Obara, Ryota Sato  
Tokyo Metropolitan University. Hachioji-shi,  
Minamiosawa, 1-1, Hachioji, Tokyo 192-0397, Japan

### Poster Code: P2-3

*Preparation of Magnetic Nanoparticles for MPI Tracers Suitable for Intranasal Administration*

**S. Seino**<sup>1</sup>, H. Ikehata<sup>1</sup>, M. Tanabe<sup>1</sup>, T. Umeda<sup>2</sup>, T. Tomiyama<sup>2</sup>, A. Tanaka<sup>3</sup>, T. Sakane<sup>3</sup>, T. Kiwa<sup>4</sup>, M. Washino<sup>5</sup>, K. Nomura<sup>1,5</sup>, S. Tonooka<sup>5</sup> and T. Nakagawa<sup>1</sup>

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### Poster Code: P2-5

*Caput Mortuum Purple Hematite Pigment: Investigation of Magnetic Properties*

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### Poster Code: P2-6

*Magnetic Properties and Hyperthermia Effect of Biocompatible Ni-ferrite Nanoparticles*

**K. Ohara**<sup>1</sup>, K. Nakazawa<sup>2</sup>, T. Sakamoto<sup>1</sup>, K. Nii<sup>1</sup>, T. Moriwaki<sup>2</sup>, and Y. Ichianagi<sup>1</sup>

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### Poster Code: P2-7

*Establishment and Development of New Encapsulation Technology for Core Components in the Nanoparticle Area of Pharmaceuticals*

**Kazuo Yagi**<sup>1,2</sup>, Tadashi Shinoda<sup>2</sup>, Shinsuke Nakanishi<sup>2</sup>, Seiichi Sugimoto<sup>3,2</sup>, Masataka Kubo<sup>2</sup>, Tadashi Inaba<sup>2</sup>

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### Poster Code: P2-8

*Improvement of Dispersion and Magnetic Hyperthermia Effect of PEG-coating CoFe<sub>2</sub>O<sub>4</sub> Nanoparticles Prepared by Ultrasound Homogenizer*

**Kenta Nakazawa**<sup>1</sup>, Kentaro Ohara<sup>2</sup>, Kazune Nii<sup>2</sup>, Takeshi Sakamoto<sup>2</sup>, Tomomasa Moriwaki<sup>1</sup>, Tatsuo Nakamura<sup>1</sup>, Masayuki Abe<sup>3</sup>, and Yuko Ichianagi<sup>2</sup>

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**Poster Code: P2-9**

*Magnetic Resonance Effect of Gd<sup>3+</sup>-doped MnFe<sub>2</sub>O<sub>4</sub> Nanoparticles*

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**Poster Code: P2-10**

*Dimorphic Magnetorheological Fluids of Microscopic Spheres and Multifunctional Magnetic Nanorods*

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**Poster Code: P2-11**

*A rapid magnetic serological test for COVID-19*

**M. Salvador**<sup>1</sup>, J. Marqués<sup>1</sup>, F. Brero<sup>2</sup>, F. G. da Silva<sup>3</sup>, J.C. Martínez-García<sup>1</sup>, M. Mariani<sup>2</sup>, A. Lascialfari<sup>2</sup>, V. Pilati<sup>4</sup>, C. Kern<sup>4</sup>, G. Gomide<sup>3</sup>, F. Orsini<sup>5</sup>, J. Depeyrot<sup>3</sup> and M. Rivas<sup>1</sup>

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**Poster Code: P2-12**

*Reversible Structure Formation by Magnetic Nanocubes*

**L. Rochels**<sup>1</sup>, R. Erkes<sup>1</sup>, F. A. F. Mees<sup>1</sup>, M. Kapuscinski<sup>2</sup>, S. Sevit<sup>3</sup>, T. Plivelic<sup>3</sup>, G. Salazar-Alvarez<sup>2</sup> and S. Disch<sup>1</sup>

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**Poster Code: P2-13**

*AC Magnetic Susceptibility of Magnetic Nanoparticles with Different Effective Core Diameters*

**Shoya Noguchi**<sup>1</sup>, Suko Bagus Trisnanto<sup>1</sup>, Tsutomu Yamada<sup>1</sup>, Satoshi Ota<sup>2</sup>, Yasushi Takemura<sup>1</sup>

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**Poster Code: P2-14**

*A numerical Study on the Interplay Between the Intra-particle and Interparticle Characteristics in Bi-Magnetic Soft/soft and Hard/soft Ultrasmall Nanoparticles Assemblies*

**F. G. Silva**<sup>1</sup>, M. Vasilakaki<sup>2</sup>, R. Cabreira Gomes<sup>1,3</sup>, R. Aquino<sup>4</sup>, A. F. Cortez Campos<sup>4</sup>, E. Dubois<sup>5</sup>, R. Perzynski<sup>5</sup>, J. Depeyrot<sup>1</sup>, and K. Trohidou<sup>2</sup>

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**Poster Code: P2-15**

*Development and Research of PEG-saccharides (including Alginate) Modified Nano-colloidal Magnetic fluid (: new type T-2 weighted MRI contrast agent).*

**Kazuo Yagi**<sup>1,2</sup>, Tadashi Shinoda<sup>2</sup>, Shinsuke Nakanishi<sup>2</sup>, Seiichi Sugimoto<sup>3,2</sup>, Masataka Kubo<sup>2</sup>, Tadashi Inaba<sup>2</sup>

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**Poster Code: P2-16**

*Extraction of Monocarboxylic Acid Modified Magnetite Nanoparticles from Water Phase using Hexane as Organic Solvent*

**Thossaporn Wijakmatee**, Yasuhiko Orita, Yusuke Shimoyama

Department of Chemical Science and Engineering, Tokyo Institute of Technology, Tokyo, 152-8550, Japan

**Poster Code: P2-17**

*Size Dependence of Surface Spin Disorder in Ferrite Nanoparticles*

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**Poster Code: P2-18**

*Tuning the Structural and Magnetic Properties of Iron Oxide Nanoparticles*

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**Poster Code: P2-20**

*Dispersion Mechanism of Polyacrylic Acid-coated Maghemite Nanoparticle in Ionic Liquids*

**Kanzaki Ryo**<sup>1</sup>, Mika Sako<sup>1</sup>, Hitoshi Kodamatani<sup>1</sup>, Takashi Tomiyasu<sup>1</sup>, Clément Guibert<sup>2</sup>, Jérôme Fresnais<sup>3</sup>, Véronique Peyre<sup>3</sup>

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**Poster Code: P2-21**

*Observation of Giant Spin Pumping in Ferromagnet – Organic Semiconductor Heterostructures*

**Mahammad Tahir**<sup>1</sup>, Ritu Gupta<sup>2</sup>, Prakash Chandra Mondal<sup>2</sup> and Soumik Mukhopadhyay<sup>1</sup>

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**Poster Code: P2-22**

*Evolution of Magnetization in Sequentially Grown Ferrite Nanoparticles*

**Nahal Rouzbeh** and Sabrina Disch

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**Poster Code: P2-23**

*Size-dependent Magnetic Properties of Synthetic Antiferromagnetic Nanoplatelets with Perpendicular Magnetic Anisotropy*

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**Poster Code: P2-24**

*Estimation of Interdepending Parameters Distribution in Magnetic Nanoparticles Based on Magnetization Curves*

**Haruki Goto**<sup>1</sup>, Yuka Akita<sup>1</sup>, Ren Takahashi<sup>1</sup>, Harutoyo Hirano<sup>2</sup>, Masato Futagawa<sup>1</sup>, Yasushi Takemura<sup>3</sup>, Satoshi Ota<sup>1</sup>

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**Poster Code: P2-26**

*Synthesis and Magnetic Properties Evaluation of High-Entropy Oxide Nanopowders*

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**Poster Code: P2-27**

*High Magnetic Anisotropy Ferrites for mm-wave Frequency Applications*

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**Poster Code: P2-28**

*Synthesis and Magnetic Properties of Co-Ni Alloy and Core-shell Structured Nanoparticles*

**Masanao Ishijima**<sup>1</sup>, Jhon L. Cuya Huaman<sup>2</sup>, Kozo Shinoda<sup>2</sup>, Masahito Uchikoshi<sup>2</sup>, Hiroaki Mamiya<sup>3</sup>, Jeyadevan Balachandran<sup>2</sup>

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**Poster Code: P2-29**

*Synthesis of Transition Metals and Alloys Using Alcohol Reduction Technique*

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**Poster Code: P2-30**

*Solution-Phase Synthesis of Cobalt-Substituted FeO nanoparticles and their Eutectoid Decomposition into Cobalt-Ferrite-Based Composite Nanoparticles*

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**Poster Code: P2-32**

*Novel Seed-mediated Sol-gel synthesis of Co<sub>1-x</sub>Zn<sub>x</sub>Fe<sub>2</sub>O<sub>4</sub>-core/SrFe<sub>12</sub>O<sub>19</sub>-matrix Bimagnetic nanocomposites*

**Pierfrancesco Maltoni**<sup>1,2</sup>, Miran Baricic<sup>3</sup>, Gianni Barucca<sup>4</sup>, Davide Peddis<sup>2,3</sup>, Roland Mathieu<sup>1</sup>

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<sup>4</sup>P. Maltoni, G. Barucca, T. Sarkar, G. Varvaro, F. Locardi, D. Peddis, and R. Mathieu, J. Phys. Chem. C. 125 (2021) 10 5927- 5936

**Poster Code: P2-33**

*Markov Chain Monte Carlo Method with Controlled Acceptance Rate Applied to the Study of Magnetic Nanoparticles*

**Johans Restrepo** and Juan Camilo Zapata  
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**Poster Code: P2-34**

*Effect of the Orientation of a Magnetic Nanoparticle with Respect to an Applied Oscillatory Magnetic Field on the Metastable Lifetime*

**Johans Restrepo, Nathaly Roa Motta**  
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**Poster Code: P2-36**

*Albumin mediated clustering effects on the magnetic behaviour of Mn ferrite nanoparticles*

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**Poster Code: P2-37**

*Dynamic Hysteretic Properties and Specific Loss Power of Magnetic Nanoparticles in a Viscous Medium at Different Temperatures*

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**Poster Code: P2-38**

*Effect of the Orientation of the Easy Axis of Magnetization on the Dynamic Phase Transition of a Single-Domain Nanoparticle in an Alternating Field*

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**Poster Code: P2-39**

*Reconstructed MXenes as two-dimensional electrides*

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**Poster Code: P2-40**

*PEFC catalytic properties of Pt / Re (Re=Gd, Ce) bimetallic nanoparticles fabricated by plasma-gas condensation method*

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