



IASIM 2022

Conference on spectral imaging
3–6 July, Esbjerg, Denmark

Conference programme

All scientific activities will take place in the **Musikhuset Esbjerg** (*Havnegade 18*). Just take the main entrance and then stairs down (follow the indication you will find there). The oral sessions will be located in the conference hall while the poster session, exhibition and coffee-breaks in the lounge area outside the hall.

Please have you conference badge on during all sessions and events. It serves also as a ticket to the excursion and the conference dinner.

Sunday, 3/07

13:00–14:00 Registration

14:00–15:20 **Hands-on LED spectral imaging**
By Videometer
Exhibition area

Using HYPER-Tools for analysis of hyperspectral images

By Jose Manuel Amigo Rubio
Conference hall

15:40–17:00 **Live demonstration of how to build a HSI real-time application**
By Hypspx/NEO/Prediktera
Exhibition area

The workshop will be from 14:00 to 17:00 with breaks in between.

17:00–19:00 Welcome reception

Monday, 4/07

8:00–9:00 Registration

9:00–9:10 Conference opening

Session 1. Chair *Anna de Juan*

9:10–9:50 **L01. Medical Hyperspectral Imaging**
Baowei Fei : University of Texas at Dallas

9:50–10:10 **T01. Combining Raman hyperspectral imaging with mass spectrometry imaging to differentiate involved from non-involved skin in discoid lupus erythematosus (dle)**
Michel Karin Nieuwoudt : University of Auckland

10:10–10:30 **T02. Non-destructive age estimation of biological fluid stains by near-infrared hyperspectral imaging and multivariate regression**
Paolo Oliveri : University of Genova

10:30–11:00 Coffee break

11:00–11:20 **T03. NIR hyperspectral imaging: a means of capturing meat fraud**
Paul James Williams : Stellenbosch University

11:20–11:40 **T04. Monitoring grape berry maturity by hyperspectral imaging: potential of robust methods for sugar content prediction**
Maxime Ryckewaert : INRAE

11:40–12:00 **T05. Hyperspectral imaging for non-invasive fish fraud detection**
Mariá-José Sáiz-Abajo : National Centre for Food Technology and Safety

12:00–12:20 **T06. Unsupervised anomaly detection in hyperspectral images of fruit by adapting a vector quantized variational autoencoder**
Remi Van Belleghem : KU Leuven

12:20–13:00 Lunch

Session 2: Chair *Ludovic Duponchel*

13:00–13:40 **L02. Hyperspectral imagery: applications in remote sensing**
Mauro Dalla Mura : Grenoble Institute of Technology

13:40–14:00 **T07. Hyperspectral-LIDAR fusion applied for multitemporal analysis of urban areas**
Agnieszka Kinga Kuras : Norwegian University of Life Sciences

14:00–14:20 **T08. Hyperspectral imaging in nuclear forensics investigation**
Lorenzo Fongaro : European Commission

14:20–14:50 Coffee-break

- 14:50–15:10 **T09. Spatial and spectral limits of detection of near infrared hyperspectral imaging of microplastics in sand**
Reaha Goyetche : University of the Basque Country
- 15:10–15:30 **T10. Using hyperspectral cameras to detect corrosion products in epoxy coatings for offshore wind turbines**
Thomas De Kerf : University of Antwerpen
- 15:30–15:50 **T11. Characterizing Ni-P metallic coatings using hyperspectral imaging in short-wave infrared**
Zohreh Zahiri : University of Antwerpen
- 15:50–16:10 **T12. Plastic classification via in-line hyperspectral camera analysis and unsupervised machine learning**
Mogens Hinge : Aarhus University
- 16:10–18:00 **Poster session and exhibition**
with tasting of local beers (sponsored by Newtec Engineering)

Tuesday, 5/07

9:00–9:10 Welcome and day overview

Session 3: Chair *Federico Marini*

- 9:10–9:50 **L03. Reflectance Imaging Spectroscopy for artworks, cultural and historical assets**
Costanza Cucci : Institute of Applied Physics "N. Carrara" CNR-IFAC
- 9:50–10:10 **T13. HSI-NIR for the quantification of collagen in bones: how chemical mapping can help in preserving archeological finds**
Cristina Malegori : University of Genova
- 10:10–10:30 **T14. Comparison of reflectance FTIR, VNIR and SWIR spectral imaging for the discrimination and identification of bacterial suspensions dried on stainless steel**
Aoife Ann Gowen : University College Dublin
- 10:30–11:00 Coffee break
- 11:00–11:20 **T15. Detection of *cronobacter sakasakii* biofilms on aluminium coupons through ultrafast FTIR spectral imaging**
Ana Herrero-Langreo : University College Dublin
- 11:20–11:40 **T16. In-line identification of PB-based additives in fishing ropes and nets for recycling with hyperspectral imaging and machine learning**
Georgiana Amariei : Aarhus University

- 11:40–12:00 **T17. Characterization of microplastics in mussels using near infrared hyperspectral imaging**
Alisa Rudnitskaya : University of Aveiro
- 12:00–12:20 **T18. Parsketch-PLSDA, a method to handle large amounts of data generated by hyperspectral imaging: application to sunflower genotype discrimination**
Daphne Heran : INRAE
- 12:20–13:00 Lunch

Session 4: Chair *Jose Manuel Amigo Rubio*

- 13:00–13:20 **T19. Correcting time-induced measurement effects in NIRS model: application to the early detection of “early blight”**
Florent Abdelghafour : INRAE
- 13:20–13:40 **T20. Characterization of N-doped diamonds after electron beam irradiation by infrared spectral imaging**
Tom Scherzer : Leibniz Institute of Surface Engineering
- 13:40–14:00 **T21. Spectral imaging as a transformer of the food-ag industry**
Jens Michael Carstensen : Videometer A/S
- 14:00–14:20 **T22. One-step calibration of industrial hyperspectral cameras**
Martin Lahn Henriksen : Aarhus University

14:20–14:50 Coffee-break

14:50–16:00 **Poster session and exhibition**

16:00–18:00 **Bus tour and excursion to Ribe — the oldest town in Scandinavia**
bus will wait just outside the main entrance of Musikhuset

18:00–19:00 **Free time**

19:00–22:00 **Conference dinner at Restaurant Flammen**
Exnersgade 20, Esbjerg

Wednesday, 6/07

9:00–9:10 Welcome and day overview

Session 5: Chair *Aoife Gowen*

- 9:10–9:50 **L04. Raman Imaging: fundamentals, modern applications and future perspectives**
Marco Veneranda : University of Valladolid
- 9:50–10:10 **T23. Searching for exotic pixels in large hyperspectral imaging data sets**
Ludovic Duponchel : University of Lille

10:10–10:30 **T24. Automatic parasite detection in fish using hyperspectral imaging**
Andreas Vidman : Prediktera AB

10:30–11:00 Coffee break

11:00–11:20 **T25. Quantitative analysis of hyperspectral images: some new insights**
Anna de Juan : University of Barcelona

11:20–11:40 **T26. Recent advances in high-resolution snapshot computed tomography imaging spectrometer**
Mads Svanborg Peters : University of Southern Denmark

11:40–12:00 **T27. Comparison of strategies for pixel selection for single- and multi-block image modeling**
Federico Marini : University of Rome "La Sapienza"

12:00–12:20 **T28. Sparse non-negative matrix factorization of hyperspectral images down to essential pixels**
Mahdiyeh Ghaffari : Radboud University

12:20–13:00 Lunch

Session 6: Chair *Paolo Oliveri*

13:00–13:20 **T29. Tomographic reconstruction of hyperspectral images - a hybrid approach using CNNs and the EM algorithm**
Mads Juul Ahlebæk : University of Southern Denmark

13:20–13:40 **T30. Joint data polytope analysis of multimodal hyperspectral images**
Nematollah Omidikia : Radboud University

13:40–14:00 **T31. Multi-spectral refuse segmentation for refuse sorting systems**
Franz Thaler : Graz University of Technology

14:00–14:20 **T32. Mathematical nuances of Generalized Least Squares**
Jose Manuel Amigo Rubio : University of the Basque Country

14:20–14:50 Conference closing and farewell