

# Conference Program



## EVENT DATE

**Nov 22<sup>nd</sup>**  
TO  
**Nov 26<sup>th</sup>**

## SPEAKERS

**+ 20** international  
speakers

## ABOUT

**New virtual format: more topics covered by renowned speakers, from all around the world!**

Every 2 years, Animine organizes its scientific academy, a unique meeting point between the feed industry and academy. This cross-cutting event offers neutral and non-promotional topics with the aim of presenting the latest advances in mineral nutrition to the public.

This year, more than 20 renowned experts will cover subjects in pure nutrition, intestinal health, microbiota management, analytical and environmental sciences.

Considering Animine expertise, the event could not afford to miss a session about the future ban of pharmacological use of zinc oxide.

Willing to make this conference attractive and dynamic, the program will consist of a mix of oral academic presentations, followed by a live quiz involving the audience. Try to win prizes!

# Conference Full Program

## DAY 1

### MICROBIOTA

Molecular methods for microbiome characterization, **Dr. Hauke SMIDT**  
Speaker n°2 **To Be Confirmed**

### GUT FUNCTION

Novel Biomarkers of Low Grade, Chronic Intestinal Inflammation in Poultry, **Dr. Mickael KOGUT**  
Biomarkers to characterize piglets' gut health, **Dr. Paolo TREVISI**

## DAY 2

### NUTRITION FOR MONOGASTRICS

Lipid digestion in poultry: limitations & strategies to improve their use, **Dr. Fifi ZAEFARIAN**  
Divalent minerals may inhibit bioaccessibility and bioavailability of carotenoids, **Dr. Torsten BOHN**

### MINERAL METABOLISM

Phytate degradation in broiler chickens and pigs, **Dr. Markus RODEHUTSCORD**  
Application & limitations of digestibility studies for determination of trace elements' bioavailability, **Dr. Daniel BRUGGER**

### NUTRITION FOR RUMINANTS

Copper in ruminants from essential to toxic, **Dr. Andrea CLARKSON**  
Update on the new NASEM Dairy Trace Mineral Requirements, **Dr. Bill WEISS**

## DAY 3

### ENVIRONMENTAL SCIENCE: ANTIMICROBIAL RESISTANCE (AMR)

Importance of antibiotics & metals as selective agents - Management options to reduce transmission of antibiotic resistance to humans, **Dr. Kristian Koefoed BRANDT**  
Livestock production as a hotspot for evolution of AMR and its transmission to humans, **Dr. Yi ZHAO**

### ZINC OXIDE: USE & BAN

101 functions of ZnO in piglets, **Dr. Edgar MANZANILLA**  
Bacteria in weaned piglets: the good, the bad and the ugly, **Dr. Wilfred VAHJEN**

### ENVIRONMENTAL SCIENCE: FEED INDUSTRY IMPACT

LCA: what is beyond global warming?, **Dr. Ralph ROSENBAUM**  
Does metal speciation in animal wastes drive its fate in amended soils ?, **Dr. Emmanuel DOELSCH**

## DAY 4

### ANALYTICAL TECHNIQUES

Bioimaging of trace elements at the nanoscale, **Dr. Dirk SCHAUMLOFFEL**  
NIR for feed ingredients : interest and limitations, **Dr. Joelle PORCHER**

### NUTRITION: MANAGEMENT OF dEB

Electrolytic balance in poultry feed formulation, **Dr. Agnès NARCY**  
Poultry dEB: back to basics with sulphur, **Dr. Steve LEESON**

### NUTRITION FOR POULTRY

Supplementation of trace minerals for poultry, **Dr. Sergio VIERA**  
Trace minerals requirement of poultry: broiler breeder, **Dr. Mojtaba ZAGHARI**

## DAY 5

Post conference symposium

### PRECISION MINERALS & GUT HEALTH

Targeting gut health & growth promotion in pigs, **Dr. Denise CARDOSO**  
Strategies to replace antibiotics &/or sulfates used as growth promoters in poultry, **Jennifer MAURIN**

### PRECISION MINERAL & NUTRITION

Maintaining piglet performance despite future pharmacological ZnO ban, **Dr. Denise CARDOSO**  
Rumen stable precision minerals for optimal ruminant nutrition, **Valérie KROMM**

EVENT DAY

**DAY 1**

EVENT DATE

**Nov 22<sup>nd</sup>**

## Microbiota



### **Molecular methods for microbiome characterization**

Dr. Hauke SMIDT, Wageningen University, The Netherlands

CET, Paris  
10:00 am

EST, New York  
05:00 am



### **To Be Confirmed**

Speaker to be confirmed

Singapore Time  
05:00 pm



## Gut Function

CET, Paris  
02:00 pm

EST, New York  
09:00 am

Singapore Time  
09:00 pm

### **Novel Biomarkers of Low Grade, Chronic Intestinal Inflammation in Poultry**

Dr. Mickael KOGUT, USDA, USA



### **Biomarkers to characterize piglets' gut health**

Dr. Paolo TREVISI, Bologna University, Italy



EVENT DAY

**DAY 2**

EVENT DATE

**Nov 23<sup>rd</sup>**

## Nutrition for monogastrics



### **Lipid digestion in poultry: limitations & strategies to improve their use**

Dr. Fifi ZAEFARIAN, Massey University, New Zealand



### **Divalent minerals may inhibit bioaccessibility and bioavailability of carotenoids**

Dr. Torsten BOHN, Luxembourg Institute of Health, Luxembourg

CET, Paris

10:00 am

EST, New York

05:00 am

Singapore Time

05:00 pm



## Mineral Metabolism

CET, Paris  
02:00 pm

EST, New York  
09:00 am

Singapore Time  
09:00 pm

### **Phytate degradation in broiler chickens and pigs**

Dr. Markus RODEHUTSCORD, Hohenheim University, Germany



### **Application & limitations of digestibility studies for determination of trace elements' bioavailability**

Dr. Daniel BRUGGER, Zurich University, Switzerland



## Nutrition for ruminants



### **Copper in ruminants from essential to toxic**

Dr. Andrea CLARKSON, Nottingham University, United Kingdom



### **Update on the new NASEM Dairy Trace Mineral Requirements**

Dr. Bill WEISS, Ohio University, USA

CET, Paris

04:30 pm

EST, New York

11:30 am

Singapore Time

11:30 pm

EVENT DAY

**DAY 3**

EVENT DATE

**Nov 24<sup>th</sup>**

## Environmental Science: Antimicrobial Resistance (AMR)



### Importance of antibiotics & metals as selective agents - Management options to reduce transmission of antibiotic resistance to humans

Dr. Kristian Koefoed BRANDT, Copenhagen University, Denmark



### Livestock production as a hotspot for evolution of AMR and its transmission to humans

Dr. Yi ZHAO, University of Geosciences, China

CET, Paris

10:00 am

EST, New York

05:00 am

Singapore Time

05:00 pm



## Zinc Oxide: Use & Ban

CET, Paris

02:00 pm

EST, New York

09:00 am

Singapore Time

09:00 pm

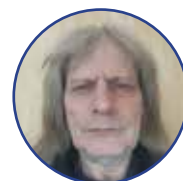
### 101 functions of ZnO in piglets

Dr. Edgar MANZANILLA, TEAGASC, Ireland



### Bacteria in weaned piglets: the good, the bad and the ugly

Dr. Wilfred VAHJEN, Berlin University, Germany



## Environmental Science : Feed Industry Impact



### LCA: what is beyond global warming?

Dr. Ralph ROSENBAUM, IRTA, Spain



### Does metal speciation in animal wastes drive its fate in amended soils ?

Dr. Emmanuel DOELSCH, CIRAD, France

CET, Paris

04:30 pm

EST, New York

11:30 am

Singapore Time

11:30 pm



EVENT DAY

**DAY 4**

EVENT DATE

**Nov 25<sup>th</sup>**

## Analytical Techniques



### Bioimaging of trace elements at the nanoscale

Dr. Dirk SCHAUMLOEFFEL, Pau University, France



### NIR for feed ingredients: interest and limitations

Dr. Joelle PORCHER, Independent consultant, France

CET, Paris

10:00 am

EST, New York

05:00 am

Singapore Time

05:00 pm



## Nutrition: Management Of dEB

CET, Paris  
02:00 pm

EST, New York  
09:00 am

Singapore Time  
09:00 pm

### Electrolytic balance in poultry feed formulation

Dr. Agnès NARCY, INRAe, France



### Poultry dEB: back to basics with sulphur

Dr. Steve LEESON, Guelph University, Canada



## Nutrition For Poultry



### Supplementation of trace minerals for poultry

Dr. Sergio VIERA, Rio Grande do Sul Federal University, Brazil



### Trace minerals requirement of poultry: broiler breeder

Dr. Mojtaba ZAGHARI, Tehran University, Iran

CET, Paris

04:30 pm

EST, New York

11:30 am

Singapore Time

11:30 pm

EVENT DAY

**DAY 5**

EVENT DATE

**Nov 26<sup>th</sup>**

## Post conference symposium

### Precision Minerals & Gut Health



#### **Precision minerals: Targeting gut health & growth promotion in pigs**

Dr. Denise CARDOSO, Animine, France

CET, Paris

10:00 am

EST, New York

05:00 am

Singapore Time

05:00 pm



#### **Precision minerals: Strategies to replace antibiotics &/or sulfates used as growth promoters in poultry**

Jennifer MAURIN, Animine, France



### Precision Mineral & Nutrition

CET, Paris

02:00 pm

EST, New York

09:00 am

Singapore Time

09:00 pm

#### **Maintaining piglet performance despite future pharmacological ZnO ban**

Dr. Denise CARDOSO, Animine, France



#### **Rumen stable precision minerals for optimal ruminant nutrition**

Valérie KROMM, Animine, France



# Speakers Biographies

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# Microbiota



**Dr. Hauke SMIDT**

Wageningen University, The Netherlands

Prof. Dr. Hauke Smidt (1967) studied Biotechnology at the Technical University of Braunschweig, University of Kyoto, Japan, and University of Stuttgart, Germany. He received his PhD in 2001 at Wageningen University, and has worked as a postdoc with Prof. Dave Stahl at the University of Washington, Seattle, focusing on the development of DNA arrays for microbial community analyses. Hauke Smidt heads the Microbial Ecology Group at the Laboratory of Microbiology, Wageningen University & Research.

gen University & Research.

His research focuses on the integrated application of innovative cultivation and functional genomics-based methods to study composition and activity of microbial communities. Key areas of interest include i) Microbiota associated with the intestinal tract in humans, production animals and wildlife ii) Microbial communities in environmental biotechnology, and iii) Microbes and their cellular biomarkers as proxies for ecosystem life history & environmental change. In this context, research in the Smidt group increasingly follows a OneHealth philosophy that links environmental, human and animal health, including but not limited to the spread of antibiotic resistant bacteria and their genes.

Research on the interplay between intestinal microbiome, host health and nutrition in pigs has been studied extensively in a series of EU-funded projects targeted at the characterization and leveraging of microbiomes in pig production (FP5 Healthypigut, FP6 FeedforPigHealth, and FP7 INTERPLAY that Hauke Smidt coordinated), as well as a number of national public-private partnerships.

Hauke Smidt has been member of the Management Team of the National BE-Basic program, and Senior Scientist and Theme Council member at TI Food & Nutrition. Hauke Smidt currently supervises approximately 20 PhD students in national and EU projects. Hauke Smidt has (co-)authored over 300 peer-reviewed publications, with an ISI WoS H-factor of currently 60. He is (co-)inventor of several patents, and he is editor in chief of ISME Communications and senior editor of ISME Journal, Microbiome and Animal Microbiome. In 2008, Hauke Smidt has been appointed Visiting Professor at Nanjing Agricultural University, and since 2010, he holds a Personal Chair in "Complex Microbial Ecosystems" at Wageningen University. Since 2020, he is also Scientific Director of the UNLOCK infrastructure for microbiome research that recently received 15 M€ funding from the Dutch Research Council.

Research at the Molecular Ecology Group of the Laboratory of Microbiology at Wageningen University focuses on the integrated application of innovative cultivation and functional genomics-based methods to study composition and activity of microbial communities, most notably those associated with the intestinal tract in humans, production animals and wildlife. We strive to elucidate the dynamic interplay of host, microbiome, diet and environment throughout life, with focus on critical windows of development and transition. Our mission is to provide mechanistic understanding of this interplay through the application of mechanistic in vitro experiments using natural as well as synthetic microbiomes, and dedicated studies of keystone species, and to contribute to the development of microbiome-inspired solutions for sustained health.

# Gut Function



**Dr. Mickael KOGUT**

USDA, USA

Dr. Kogut is a Research Microbiologist and Lead Scientist within the Food and Feed Safety research Unit at the Southern Plains Agricultural Research Center, College Station, TX, USA.

Dr. Kogut has published over 200 peer-reviewed scientific papers, 11 book chapters, and has received 5 patents.

Dr. Kogut's research is centered on gut health of poultry and alternatives to antibiotics to control disease and increase production.

Specifically, Dr. Kogut's research has concentrated on the development of cost-effective immunological interventions to improve gut health by studying the role of the microbiota in immunity to infection; the role of dietary metabolites in promoting immune regulation and immune responses to pathogens; tissue specific regulatory responses to infection; characterizing novel molecular targets that mediate the actions of dietary compounds and botanicals in inflammation and immunity; investigating how diet modulates the gut microbiome and mucosal immune responses; and understanding the integration of central metabolic pathways and nutrient sensing with antimicrobial immunity and how it alters cellular energy homeostasis and contributes to the prevention or resolution of infectious diseases

**Dr. Paolo TREVISI**  
Bologna University, Italy



Dr. PAOLO TREVISI research is focused to study the issues related to feeding and management strategies in pig. His research has the main objective to reduce the anorexia in the post-weaning period, to improve the growth performance and health status of the pigs.

In particular, his research is focused to study the markers of health of the intestinal tract in pigs at weaning; humoral immunity and the expression of Toll Like Receptors (TLRs) in the gut and liver; the alternative to antibiotics in feed in the critical phase of pig life.

Currently, his research is finalized to study: signals that regulate the chemo sensing signaling in the gastro-intestinal tract; the mechanisms involved in the maturation of the gut during weaning and in the intestinal mucosal healing; new dietary strategies to reduce psychophysical stress occurring during the weaning, the relationship between molecular nutrients and gene expression and the interplay host-microbiota on growth performance and health of the young animal.

# Mineral metabolism



**Dr. Markus RODEHUTSCORD**

Hohenheim University, Germany

Dr. Markus Rodehutschord is the professor of animal nutrition in the Institute of Animal Science at the University of Hohenheim, Germany.

The research of his group is on amino acid and mineral metabolism of livestock and related aspects of feedstuff evaluation for different animal species. A current focus is on phytate degradation in the digestive tract.

To date, Dr. Rodehutschord has completed supervision of 37 doctoral students, co-authored 250 peer-reviewed journal publications, and coordinates interdisciplinary research consortia.

Dr. Rodehutschord serves as the chair of the Standing Committee on Nutrient Requirements of the Society of Nutritional Physiology, is involved in the editorial processes of scientific journals, and has been awarded prestigious prizes.

**Dr. Daniel BRUGGER**  
Zurich University, Switzerland

Trained in animal production science and animal bioscience, Dr. Daniel Brugger has been involved in trace element research since the beginning of his academic career, which comprised employments at Technical University of Munich (Germany) and the University of Zurich (Switzerland).

Daniel is particularly interested in the experimental methodology of trace element research. Special emphasis is put on zinc and the experimental induction of subclinical zinc deficiency, as the most common zinc malnutrition phenotype in humans and animals to perform basic and applied research in zinc metabolism and feeding strategies. His research activities in these areas earned him several distinguished scientific awards.

Current research topics comprise the metabolic interaction between macro and microelements in livestock organisms as well as the homeostatic principles of trace element metabolism in layers and dairy cows. He is a member of several scientific advisory boards as well as the editorial boards of several peer-reviewed journals.





# Nutrition: Monogastrics



**Dr. Fifi ZAEFARIAN**

Massey University, New Zealand

Fifi Zaefarian works as a Senior Lecturer in Poultry Nutrition for Monogastric Research Centre, Massey University, New Zealand.

Fifi graduated with PhD degree in Poultry Nutrition from University of Tehran, Iran. She has published in top ranking Animal Science Journals and already has over 90 scientific communications, including 39 peer-reviewed articles and one

book chapter.

As an invited speaker, Fifi has presented her work in a number of international conferences and industry seminars.

Fifi's current interest is poultry nutrition focusing on nutrient digestion, feed additives and feed evaluation.

**Dr. Torsten BOHN**

Luxembourg Institute of Health, Luxembourg

Dr Torsten is currently the head of the Plant and Nutrition Unit at the Public Research Center - Gabriel Lippmann in Luxembourg. Following his PhD in human nutrition which was awarded by the Swiss Federal Institute of Technology (ETH) in Zurich for studies on "Magnesium Absorption in Humans" in 2002, he made his postdoc at the Ohio State University, at Columbus, OH.



During this time he focused on human studies investigating potential health benefits of consuming soy and tomato rich foods, which also sparked the interest for a more general relation between Food and Health, some topics of which appear in this present book "Nutrition, Well-Being and Health", aiming to highlight selected areas of nutrition and health interactions. Torsten Bohn has published ca. 50 peer reviewed articles encompassing reviews and book chapters. He is a member of the Editorial Board of the British Journal of Nutrition and has edited several special issues for various Food and Nutrition oriented Journals. His main research focus is the bioavailability of phytochemicals, especially carotenoids and polyphenols, and their relation to inflammation and oxidative stress.



**Dr. Agnès NARCY**

INRAE, France

My activities focus on the use of minerals and their determinants in pigs and poultry as well as on their capacity to adapt at the digestive level.

This work integrates both an approach to understand the mechanisms related to the use of nutrients and more finalized activities aiming at proposing more efficient feeding strategies allowing farming systems to be part of a sustainabil-

ity approach.

By combining experimental and modeling approaches, recommendations for mineral intake in both species can be reviewed. In addition, nutritional (mineral restriction), physiological (laying) or genetic (digestive efficiency) models are used to improve the knowledge regarding the potential of animals to adapt.

Head of the research team "Nutrition and Livestock Systems"

Member of the Working Group N°2 Nutrition of the WPSA and member of the phosphorus sub-group.

Elected member of the scientific council of INRAE-PHASE division

**Dr. Steve LEESON**

Guelph University, Canada

His main area of research is potential for manipulation of eggs and poultry meat as it impacts human health.

They have been working on incorporation of omega-3 and other polyunsaturates into eggs for some 10 years, and most recently have been studying the transfer efficiency of lutein into eggs. Lutein is known to sustain eye health in humans, and eggs will likely become a major dietary source of this nutraceutical.

Other research involves the use of medium chain triglycerides to impact gut health in the absence of antibiotic growth promoters.







### **Dr. Sergio VIERA**

Rio Grande do Sul Federal University Brazil

Graduated in Agronomy from the Federal University of Rio Grande do Sul (1984), Master in Animal Science from the Federal University of Rio Grande do Sul (1990), Doctorate in Poultry Science from Auburn University (1999) USA, and Post Doctorate at the University of Maryland (2011), USA. A.

He is currently a full professor at the Federal University of Rio Grande do Sul, editor of the nutrition area of the Journal of

Applied Poultry Research, participates in the editorial board of Poultry Science, Livestock Production Science, Rural Science, Brazilian Journal of Animal Science, British Journal of Nutrition, Brazilian Journal of Poultry Science, Animal Feed Science and Technology, Journal of Agricultural Science and Technology.

His research has emphasis on nutritional requirements of animals, enzymes and other additives, as well as carcass composition, working mainly on the following topics: broiler, swine, ideal protein, enzymes, minerals, and breeders.

He is the nutrition editor of the Journal of Applied Poultry Research, Director of the Poultry Science Association, and CONCEA advisor.

### **Dr. Mojtaba ZAGHARI**

Tehran University, Iran



With 32 years of experience in the field of poultry nutrition, feed production, and poultry production (Pure line, grandparent, parent stock, broiler, and layer hens).

He is graduated in Animal Science from the University of Tehran (1991), Master in Animal Science from the University of Tehran (1995), Doctorate in Poultry Science from University of Tehran (2002).

He is currently a full professor at the University of Tehran, also part of the editorial board of the Iranian Journal of Animal Science, Journal of Livestock Science and Technologies, and responsible for Mina-Toyoor publishing.

His research has emphasis on nutritional requirements of animals and feed additives.

# Nutrition: Ruminant



**Dr. Andrea CLARKSON**

Nottingham University, United Kingdom

Andrea Clarkson PhD is a researcher and lecturer in Animal and Veterinary Science, specialising in trace element nutrition with over 15 years' experience in the field.

Andrea is passionate about education and sharing knowledge discovered through research to improve animal welfare on a practical level. She provides professional development programmes and consultancy services to farmers and veteri-

nary professionals as well as fulfilling her teaching commitments and continuing to research into one of the most problematic elements in livestock nutrition; copper.

Throughout her career she has been awarded several 'Gold' awards for her presentation skills and teaching materials. A trend she hopes to continue through one of her current projects; the Mineral Masterclass.

Irrespective of her role as facilitator or educator, all her activities have animal welfare at the core.

**Dr. Bill WEISS**

Ohio University, USA

Dr. Bill Weiss was a Professor and Extension Specialist of dairy cattle nutrition at The Ohio State University (Wooster) for more than 30 years, but he retired in early 2021.

His main research areas were factors affecting digestibility by dairy cows, relationships between minerals and vitamins and health of dairy cows, and developing methods to incorporate cow and diet variability into ration formulation.

Dr. Weiss has published more than 140 journal articles and 450 proceedings and extension articles. He has won several ADSA awards and was named a Fellow of the American Dairy Science Association in 2015.

He is also a member of ARPAS and a Diplomat of the American College of Animal Nutrition.

He was a member of the 2001 NRC Dairy Committee and is serving as co-chair on the 2020 NRC Dairy Committee.

Dr. Weiss earned his B.S. and M.S. at Purdue University and his Ph.D. at The Ohio State University.



# Environmental Science



**Dr. Kristian Koefoed BRANDT**

Copenhagen University, Denmark

Kristian Koefoed Brandt (KKB) is an associate professor (since 2007) and leader of the Environmental Microbiology Research Group (since 2016) at the Department of Plant and Environmental Sciences at University of Copenhagen, Denmark.

He is also a senior lecturer (since 2013) at the Sino-Danish Center for Education and Research in Beijing, China.

His expertise is in microbial ecology, environmental microbiology, and microbial ecotoxicology and his research group use state-of-the-art technologies to study microbiomes and their interactions in a range of different environments.

The environmental dimension of antibiotic resistance has been a major research area for the last decade with a special emphasis on the role of metals for expansion of the soil bacterial resistome. KKB has also authored several reviews on risks associated with environmental development and transfer of antibiotic resistance.

**Dr. Yi ZHAO**

University of Geosciences, China



Since the introduction of antibiotics into clinical practices in the 1940s, antibiotics have become an integral part of animal production to meet the increasing human demand for animal-derived foods. As a result, industrial-scale animal production has emerged as a hotspot for the evolution and dissemination of antibiotic resistance genes (ARGs), thereby potentially contributing to a looming public health crisis.

The knowledge of ARGs in livestock systems has been greatly expanded with the recent development of rapid molecular tools.

Hence, we here provide this talk focusing on ARGs in livestock systems in a One Health perspective, to untangle the complexities of ARGs across animals, environments and humans. We highlight the burden of using antimicrobials in animals for public and environmental health, and also the urgent needs for mitigating the spread of antibiotic resistance from the livestock industries.



### **Dr. Ralph ROSENBAUM**

IRTA, Spain

Scientist with main expertises in methodological development and improvement of (environmental) system analysis and sustainable development tools such as life cycle assessment (LCA) and comparative risk assessment as well as teaching and supervising students from undergraduate to Ph.D. level and engineers/scientists in continuing education in ecodesign, environmental systems analysis and modeling, LCA and sustainable development in general.

Contributing to the establishment of global recommended practice and guidance on LCA, Ralph is member (partly chairman) of several expert groups and task forces of the UNEP-SETAC Life Cycle Initiative as well as advisory groups of the Society of Environmental Toxicology and Chemistry (SETAC).

### **Dr. Emmanuel DOELSCH**

CIRAD, France

Emmanuel Doelsch is a Researcher of the Recycling and risk Research Unit (<https://ur-recyclage-risque.cirad.fr>) of the French Agricultural Research Centre for International Development (CIRAD). He received a PhD in Environmental Geosciences from the Aix-Marseille University, France. Since 2007, he is seconded to CEREGE ([www.cerege.fr](http://www.cerege.fr)), Aix-en-Provence, France. He is developing research devoted to assessing the environmental impact of the agricultural recycling of organic waste. His major research focus is on the biogeochemistry of trace elements with a special interest in synchrotron-based techniques for the investigation of biological and environmental processes at a molecular level.





# Zinc Oxide: Use & Ban



**Dr. Edgar MANZANILLA**  
TEAGASC, Ireland

Edgar Garcia Manzanilla, DVM, PhD, MPVM, Dipl. ECPHM. completed his degree in Veterinary Medicine in 2000 and his PhD in 2005 at the Universitat Autònoma de Barcelona (UAB). In 2006 he moved to the University of California - Davis (USA).

His work at UCDavis was focused on the relationship between nutrition, antibiotic use and the development of the immune response. While at UCDavis he also obtained a Master in

Preventive Veterinary Medicine (MPVM). He went back to UAB in 2009 where he worked as researcher until he moved to Ireland in 2014 where he is currently the Head of the Pig Development Department of Teagasc.

He is participating in different projects on monogastric nutrition and reduction of the use of antimicrobials in farms and he has special interest in the epidemiologic approach to these aspects using different statistical methods.

**Dr. Wilfred VAHJEN**  
Berlin University, Germany



Wilfred Vahjen, Dr. rer. nat. completed his degree in Biology by the Technical University Braunschweig (Germany) in 1992 and in 1994 he obtained his PhD degree at the same university.

He was a Postdoctoral fellow at the Institute of Animal Nutrition at the University of Halle, Germany, from 1995 to 1996. Since then, he is a research assistant at the Institute of Animal Nutrition, Freie Universität Berlin, Germany.

His major interest is focus on the impact of feed components on the composition and activities of intestinal bacterial communities in farm animals.



# Analytical Techniques



## Dr. Dirk SCHAUMLÖFFEL

Pau University, France

Dirk Schaumlöffel has been a research professor at the French National Center for Scientific Research (CNRS) since 2011 working at the Institute of Analytical Sciences and Physicochemistry for Environment and Materials (IPREM) at the University of Pau, France.

His scientific research focuses on analytic-chemical developments for essential and toxic trace elements in biological organisms. One of his main activities includes trace element imaging in biological cells and tissue at nanometer level by nanoscale secondary ion mass spectrometry (NanoSIMS) with applications in nutrition, environment, and toxicology.

He graduated in chemistry from the Philipps-Universität Marburg in Germany where he obtained his doctorate (Dr. rer. nat.) in 1995. After leaving the University of Marburg he continued his academic career as research scientist at the GKSS Research Center in Geesthacht, Germany, and in 2003 he entered the CNRS in France. From the University of Pau he obtained his habilitation in analytical chemistry and the title of a professor.

Furthermore, Dirk Schaumlöffel is Editor-in-Chief of the Journal of Trace Elements in Medicine and Biology, General Secretary of the Federation of European Societies on Trace Elements and Minerals (FESTEM), and President of the German Society for Minerals and Trace Elements (GMS).

## Dr. Joelle PORCHER

Independent consultant, France

Joelle Porcher is a consultant, expert in near infrared spectrometry (NIR) and Laboratory.

Trained as a biochemist, she worked for 24 years in the animal nutrition sector within the TFN laboratory, for which she was responsible. Since 2003, she has been developed NIRS applications for the Techna group.

Passionate about the tool, in 2018 she decided to devote herself to it full time. She combines NIR with the laboratory, where the notions of reliability and trueness are present and indispensable for the validation of predictions.

As a user and developer of calibration, she is confronted with numerous situations during on-site implementations in France and abroad, where the equipment environment, sample preparation and reference methods receive her full attention.

Today, she guides companies wishing to equip themselves, accompanies them to develop their expertise via NIRS or to reinforce their quality control.





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