

SCIENTIFIC PROGRAM,  
ABSTRACT & CV

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# SKANDENDO 2016

25th-27th of august 2016 | Scandic Hotel, Copenhagen, Denmark  
Hosted by Danish Endodontic Society (DE)



# WELCOME TO SKANDENDO 2016

It is with pleasure that the Danish Endodontic Society is warmly welcoming all of you to SkandEndo 2016 in Copenhagen, Denmark. Thank you everybody for choosing to participate. With the stunning SkandEndo Congress 2014 held in Reykjavik, Iceland, in mind - an experience everyone who attended will never forget - it is of course with great humility and a slight nervousness we are hosting this year's event. Thank you once again for a memorable event, Iceland (who is also freshly in our football minds, thank you for that as well :0))!

We know (sorry of course hope :0)) that the next couple of days will be a nice mixture of the exchange of endo-knowledge, professional updates, and meeting old and making new friends at the social events, as always, in a warm and friendly Scandinavian atmosphere.

We have selected a palette of issues which ultimately are all very much linked. We have invited an array of distinguished international and national lecturers - not to forget our own Danish contributors. Thanks to all of them for accepting our invitation.

**Biofilms** have of course always been among us, not only in the deep caries lesion and the necrotic root canal associated with apical periodontitis, but everywhere. What is the status concerning biofilm and is it special deep down the roots? How do we control it? What about a nano-technology approach? Speaking of the "deep lesion's challenge", how is this best treated - should we always approach it in the same way or not?

On the cover illustration we have a balloon flying in the sky of Copenhagen. Please notice, that the balloon

might also mimic a flying light bulb, as one of our topics this year will be the status of **Light disinfection** or photodynamic therapy in general and for dental use - involving Laser and LED.

**Cone Beam CT** has become a common tool within endodontics, but do we use it the best way? When is it beneficial to use for us and our patients? In between the scientific program we have planned some cozy social activities and maybe a surprise or two - who knows?

Finally, but not least, we would like to acknowledge all the sponsors who have contributed to this event; your participation is highly appreciated. Our Gold sponsor, VDW, has also contributed with a sponsor speaker. Our two Silver sponsors being Dentsply-Sirona and Zendium, of which the first is sponsoring a lecturer as well. Also thanks a lot to all our four Bronze sponsors: Coltene, Kerr, Sendoline and Unident. Please take advantage of the possibility of consulting and meeting all our sponsors in the exhibition area just next to the Conference Hall!

Cheers and welcome again to all of you from all of us,

## Local Organizing Committee | Danish Endodontic Society

Mads Juul  
Vitus Jacobsen  
Casper Kruse  
Lotte Hein Sørensen  
Gitte Bruun  
Lars Bjørndal

### GOLD SPONSOR



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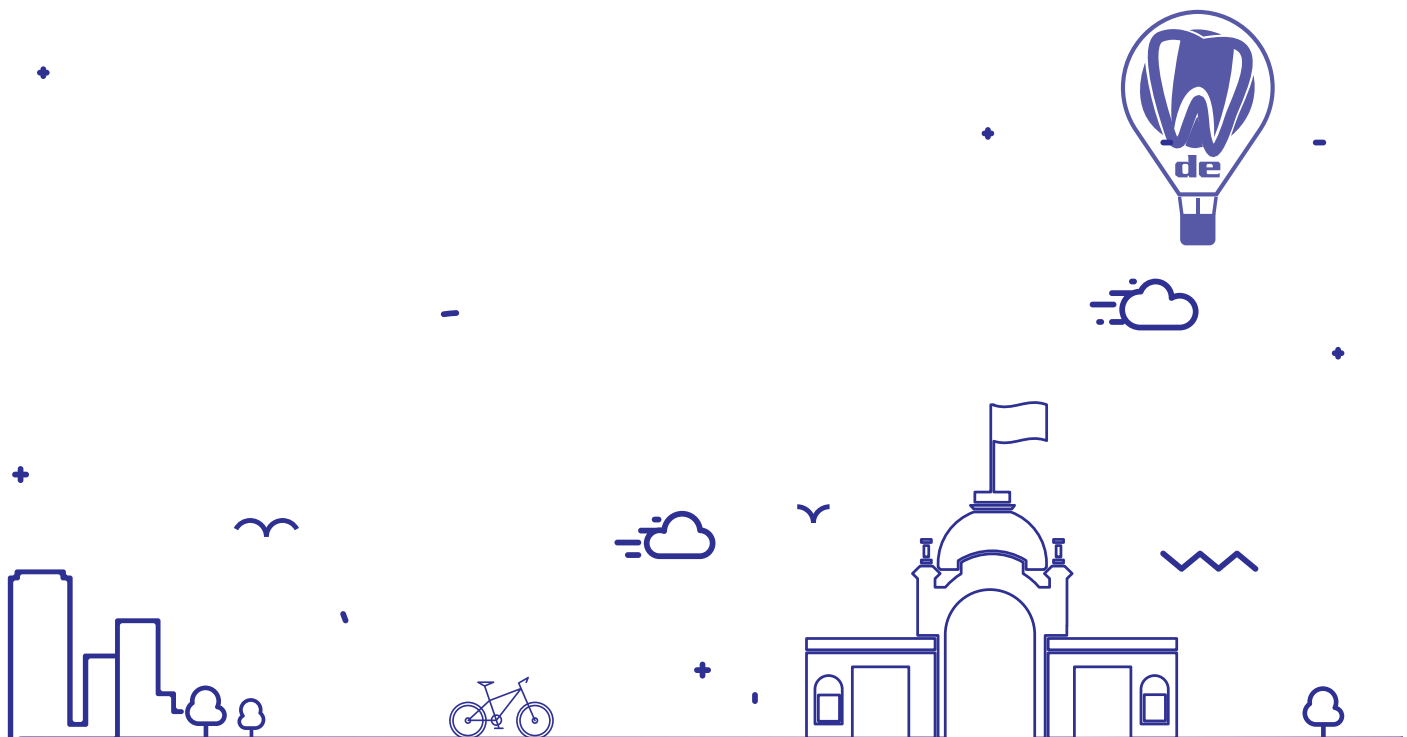


**SCIENTIFIC AND  
SOCIAL PROGRAM**



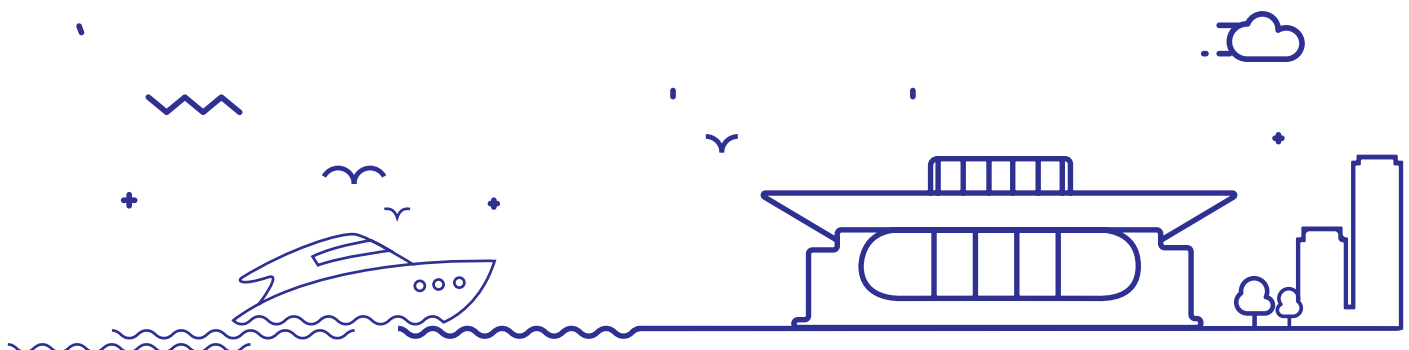
## THURSDAY AUGUST 25TH

9.00-13.30	<b>Registration of delegates</b> Conference lobby (exhibition area)
12.30-13.30	<b>LUNCH</b> Buffet in the exhibition area
13.30-13.45	<b>Welcome - Lars Bjørndal, Chairman, Danish Endodontic Society</b> Conference hall Grandball
13.45-17.45	<b>Scientific program</b> Conference hall Grandball
13.45-14.25	<b>Paul Michael Petersen, Prof., Ph.D., Technical University of Denmark</b> Light for Dental Use: New Possibilities for Diagnostics and Disinfections
14.30-15.45	<b>Roeland De Moor, Prof., Ph.D., Ghent University, Belgium</b> Laser, ultrasonics and nano technology
15.45-16.15	<b>COFFEE BREAK</b> Exhibition area
16.15-16.40	<b>Oral poster presentations</b> Conference hall Grandball
16.45-17.45	<b>VDW Gold Sponsor speaker</b> <b>Dr. David Sonntag, Germany</b> Aspects of treating calcified canals Conference hall Grandball
17.45-17.55	<b>Information on the evening's social program</b>
18.00-18.30	<b>General assembly</b> Conference hall Grandball
19.30-22.30	<b>Dinner in Tivoli</b> Meeting point: Restaurant "Påfuglen", Tivoli



## FRIDAY AUGUST 26TH

8.30-12.30	<b>Scientific program</b> Conference hall Grandball
8.30-9.30	<b>Dentsply Sirona Silver Sponsor speaker</b> <b>Dr. Marco Georgi, Germany</b> CBCT, more than just an additional diagnostic tool
9.35-9.45	<b>Lars Bjørndal, Associate Prof., Ph.D., Dr. Odont., Copenhagen University</b> The mystery of a blocked nostril
9.50-10.30	<b>Svante Twetman, Prof., Odont. Dr., Copenhagen University</b> The nature of oral biofilms in health and disease
10.30-11.15	<b>COFFEE BREAK</b> Exhibition area
11.00-12.30:	<b>Anil Kishen, Prof., B.D.S., M.Sc., Ph.D., University of Toronto, Canada</b> Antibiofilm efficacy of photosensitizer-functionalized bioactive nanoparticles on multispecies biofilm
12.30-13.30	<b>LUNCH</b> Hotel restaurant, Scandic
13.30-17.00	<b>Scientific program</b> Conference hall Grandball
13.30-14.30	<b>Luis Chávez De Paz, Assistant Prof., D.D.S., MS, Ph.D., Endodontics, Karolinska Institutet</b> The endodontic biofilm - is it special?
14.35-15.00	<b>Sune Demant, D.D.S., Ph.D. - stud., Copenhagen University</b> A clinical serial case study for the PAD in teeth associated with apical periodontitis.
15.00-15.30	<b>COFFEE BREAK</b> Exhibition area
15.30-16.00	<b>Merete Markvart, Assistant Prof., Ph.D., Copenhagen University</b> The effect of LED illumination on natural endodontic biofilms.
16.05-16.50	<b>Helena Fransson, Associate Prof., Odont. Dr., Malmö University</b> The clinical evidence of PAD in Endodontics
16.50-17.00	Information on the evening´s social program
17.00-17.30	Bus ride from Scandic Hotel to the canal tour boats
17.30-18.30	Canal tour by boat to The Copenhagen Opera House
18.30-22.30	Social event and dinner in The Copenhagen Opera House

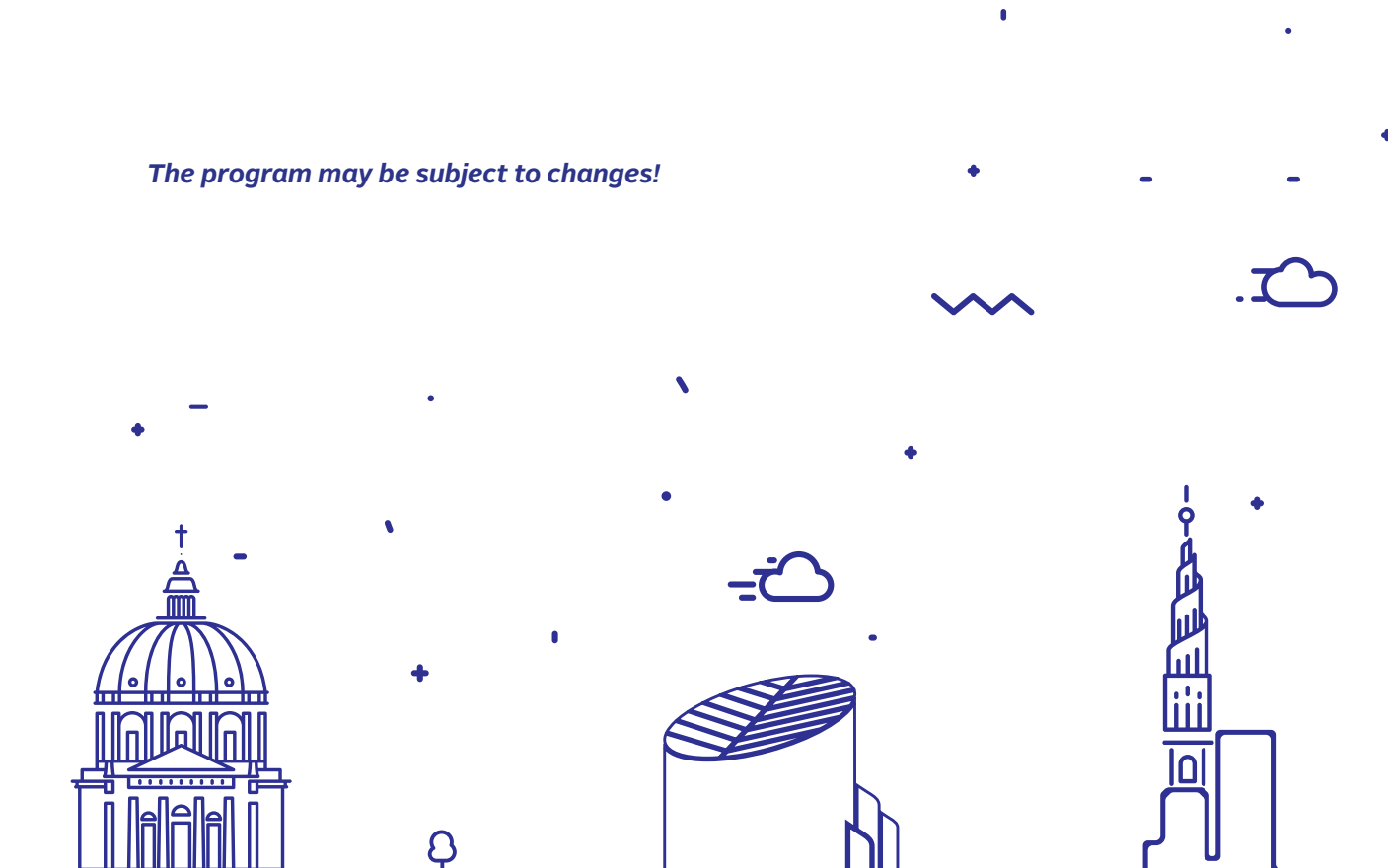


## **SATURDAY AUGUST 27TH**

9.00-12.45	<b>Scientific program</b> <i>Conference hall Grandball</i>
9.00-10.30	<b>Anil Kishen, Prof., B.D.S., M.Sc., Ph.D., University of Toronto, Canada</b> Other nano particle applications – clinical perspective – the deep lesion and the regenerative pulp therapy
10.30-11.00	<b>COFFEE BREAK</b> Exhibition Area
11.05-11.45	<b>Lina Stangvaltaite, Associate Prof., Ph.D., UiT, The Arctic University of Norway</b> The “deep lesion” challenge – Prevalence and management of deep carious lesions in Northern Norway
11.45-12.45	<b>Rubens Spin-Neto, Associate Prof., Ph.D., Aarhus University</b> CBCT and how its technical aspects can influence the diagnostic outcome
12.45-13.45	<b>LUNCH</b> Exhibition area
13.45-15.30	<b>Scientific area</b> <i>Conference hall Grandball</i>
13.45-14.30	<b>Casper Kruse, Ph.D.-stud., Aarhus University</b> CBCT used in endodontics – where are we today?
14.35-15.15	<b>Jørgen Buchgreitz, D.D.S., private practice, Allerød</b> CBCT and optical surface scans for guided access preparation
15.20-15.30	<b>Final remarks   Lars Bjørndal, Chairman, Danish Endodontic Society</b>



***The program may be subject to changes!***





**SCIENTIFIC PROGRAM,  
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## Light for dental use: New Possibilities for Diagnostics and Disinfection

**Speaker: Paul Michael Petersen, Prof., Ph.D., Technical University of Denmark**

**P**hotonics is an exciting technology that increasingly influence our daily lives. Developments of new LED light sources considerably reduce the electricity consumption dedicated to lighting. In medicine, optical technology is enabling new therapies that improve our health. In this presentation I will give an introduction to Light Emitting Diodes (LEDs) and show how LEDs in the future may be used for dental applications. Today LEDs are used for general lighting in dental clinics but the ability to select the color composition of LEDs will in the future make it possible to improve the ability to visually identify plaque and other diseases in the oral cavity. Light induced fluorescence using blue LEDs is a clinical tool for diagnostics of tumors, bacteria and plaque. In combination with a photosensitizer the light may lead to cell necrosis and the procedure is used in photodynamic therapy for disinfection of bacteria in the root canal. UV-LED is a new LED light source that may be used for disinfection without the need for a photosensitizer. At DTU Fotonik we work on the development of UV-LEDs that are optimised for disinfections of specific bacteria. The latest results of the efficiency of killing *P. aeruginosa* using UV-LEDs will be reviewed.



*Biography:*  
Paul Michael Petersen is Full Professor in New Light Sources at the Technical University of Denmark. Prof. Petersen has more than 20 years of research experience in lasers, LEDs and optical measuring techniques. From 2002 until 2012 he was appointed adjunct professor in Optics at the Niels Bohr

Institute, Copenhagen University. P. M. Petersen has authored more than 150 international scientific publications and holds 15 patents. P. M. Petersen is chairman of DOLL – a Photonics Green lab that tests and develops new lighting technology based on LED and diode laser technologies.

## Lasers, Ultrasonics and Nanotechnology. Value added cleaning and disinfection of the root canal: conventional irrigant activation, laser irradiation and laser-activated irrigation, and nanodisinfection

**Speaker: Roeland De Moor, Prof., Dr., Ph.D., Ghent University, Belgium**

**A**mong present-day marketed systems ultrasonic activation appears to be the best way to activate and potentiate endodontic irrigants. An alternative for ultrasonic activation of irrigants is laser activated irrigation (LAI) or photon-initiated acoustic streaming. Based on present-day research it appears that LAI (especially with Erbium lasers) can be more efficient for debris removal out of root canals and interaction with the endodontic biofilms thanks to the induction of specific cavitation phenomena and acoustic streaming. Other wavelengths are also used for endodontic applications and some are now explored to be used for LAI. Another way to interact with biofilms is to rely on metal nanoparticles. The exploitation of the unique attributes of nanoparticles to combat infections has increased markedly over the past decade. The latest insights into the application of nanoparticles for endodontic purposes, including their use in photodynamic therapy and laser-induced photoporation is discussed.



*Biography:*  
Prof. dr. Roeland De Moor graduated in 1984 at the Ghent University (Belgium), where he completed a MSc in Paediatric Dentistry and Traumatology, and a MSc in Restorative Dentistry and Endodontology. He received his PhD in 1995. From 1984 until 1998 he ran a private dental clinic with focus on restorative

dentistry and endodontics, and became endodontist in 1997. He was appointed as an associate professor in 1998, full professor in 2008 and ordinary full professor in 2014 at the Ghent University, where he teaches restorative dentistry, endodontics and dento-alveolar traumatology. He is the chair of the Department of Restorative Dentistry and Endodontology, and in charge of the three-year Master after Master programme in Endodontics, and a postgraduate training in laser dentistry. Research is focused on root canal cleaning and disinfection a.o. with laser activated irrigation and light activated nanoparticles, the use of lasers and light in endodontics such as Laser Doppler Flow Metry and dental laser bleaching. His department has also an epidemiological research line focusing on endodontic quality, minimal invasive restorative and endodontic techniques and the use of bioactive materials in endodontics. He gives lectures worldwide on the use of light and lasers in endodontics, on dental laser bleaching, and on the application of nanotechnology for endodontic purposes. He is (co)author of more than 150 international peer reviewed articles together with the Ghent Dental Photonics Research Clustre and BIOMAD (Biomedical Applications in Dentistry).



## The nature of oral biofilms in health and disease

**Speaker: Svante Twetman. Prof., Dr. Odont., Copenhagen University**

**R**ecent human microbiome research has provided insights that biofilms are beneficial for health and well-being. Balanced and diverse biofilms are associated with health (homeostasis) while destabilized biofilms are linked to reduced diversity and disease (dysbiosis). The Human Oral Microbiome Database contains over 600 taxa and 13 phyla but a “healthy” core oral microbiome is shared by most humans. The exact architecture and composition of the oral biofilm is however unique for each individual and influenced by genetics, age, diet and behavior, etc. The first year of life is most important as the sequence and timing of exposure to various microbes will dictate the composition of the oral biofilm on a “first come, first served” basis. Furthermore, ecological stress may destabilize the oral biofilm and favor growth of harmful bacteria. For caries, frequent sugar intakes are fueling acid-stress and altering the biofilm profile through promoting growth of acidogenic and aciduric species. Accordingly, caries management should attempt to control biofilm stability rather than eradicating plaque and/or targeting specific oral pathogens. Clinical examples of this ecological approach for the maintenance of oral health will be given.



*Biography:*  
Svante Twetman is a specialized pediatric dentist and professor of cariology at the Faculty of Health and Medical Sciences, University of Copenhagen, Denmark. He graduated from the dental school 1974 and holds the PhD and Odont Dr degree from Karolinska Institutet, Stockholm,

Sweden. The research is focused on the role of oral biofilms in health and disease, risk assessment/caries prevention in children and young adults. The most recent topics deal with biofilm control rather than eliminating bacteria and the use of pre- and probiotic bacteria to maintain a stable and diverse biofilm. The research has to a large extent been performed in clinical settings with further studies in the laboratory. Dr. Twetman has authored and co-authored over 225 peer-reviewed papers and lectured in all continents. He is a consultant of The Swedish Council on Health Technology Assessment and involved in systematic reviews and mapping of knowledge gaps. Among several awards, he received the IADR distinguished scientist award in 2010 and the IADR Borrow Award in 2011.

## Antibiofilm efficacy of photosensitizer-functionalized bioactive nanoparticles on multispecies biofilm.

### Countering root canal biofilm: Where are we now and where are we going?

**Speaker: Anil Kishen BDS, MDS, PhD. Professor & Head, Discipline of Endodontics, University of Toronto**

**M**icrobial-biofilms in root canal systems have been recognized as a major therapeutic challenge. This is primarily because of the ability of biofilm bacteria to resist antimicrobials and the difficulty involved in eliminating them from the entire root canal system. Enhanced irrigation strategies with potent antimicrobials, when combined with root canal instrumentation have been recommended as the appropriate method to disinfect the infected root canal system. This lecture will review the current challenges in root canal disinfection, fundamentals of root canal irrigation dynamics and the ability of antimicrobial photodynamic therapy to combat root canal biofilms.



## Other nano particle applications – clinical perspective – the deep lesion and the regenerative pulp therapy. A potential game changer?

**Speaker: Anil Kishen BDS, MDS, PhD. Professor & Head, Discipline of Endodontics, University of Toronto**

The major challenge in any regenerative or repair procedure within root canal is the inability to recondition the previously infected root dentin to a favorable microenvironment that promotes predictable tissue engineering procedures. Several non-specific, topical antimicrobials are used routinely in conventional endodontic therapy. These antimicrobials may significantly alter the chemical composition and ultrastructure of dentin matrix, which in turn may interfere with the inherent potential of dentin to promote regeneration. Unfortunately, these are some of the lingering issues even in conventional root canal therapy. Bioactive nanoparticles have received significant interest in biomedicine, mainly because of their capacity to be modified for different functional requirements in the treatment of infected tissue. This lecture will cover the challenges involved in regenerative endodontic procedures, fundamentals and application of bioactive nanoparticles for regenerative endodontic procedures.



*Biography:*  
Anil Kishen graduated with a Bachelor of Dental Surgery from the University of Madras, and a Master of Dental Surgery in Endodontics & Operative Dentistry from the Tamilnadu Medical University, Madras, India. He subsequently received his PhD in Biomedical Engineering from the

Nanyang Technological University, Singapore. In 2003, he joined the National University of Singapore as an Assistant Professor and was later promoted as Tenured Associate Professor in the Department of Restorative Dentistry. In 2009 he moved to the University of Toronto in Canada, where he is currently a Full Professor & Head of the Discipline of Endodontics. He has published over 125 peer-reviewed publications, and is a co-inventor in 7 patents and invention disclosures. He is a recipient of many awards and honors including, The Enterprise Challenge Innovator Award in Singapore (2002), Honorary Diplomate of the Indian Board of Endodontics (2013), the AAE Foundation-Dentistry-Research Excellence Team Award (Principal Investigator) and the Journal of Endodontics Award. He has published 19 book chapters and co-edited three books. He serves as an Associate Editor for the Journal of Endodontics, Endodontic Topics and BMC Microbiology. And serves as an Editorial Board Member for several international journals. At the University of Toronto, Dr. Kishen is involved with the undergraduate/graduate teaching, and is the Principal Investigator of a laboratory that focuses on Photo-Therapeutics and Nanomaterial research. His research is funded by the Canadian Foundation of Innovation, American Association of Endodontists Foundation and Natural Sciences & Engineering Research Council of Canada.

## The Root Canal Biofilm – is it special?

**Speaker: Luis Chávez de Paz, DDS, MSc, PhD**

The contemporary view of root canal infections, based on clinical analyses, microscopic observations and laboratory studies, contemplates that these infections are caused by multispecies biofilms adhered to the main canal, apical deltas and apical cementum. In multispecies biofilms, bacteria are not only efficiently protected from antimicrobials and the attack of host defenses, but they are also provided with nourishment and mechanisms for survival. Considering that the root canal microbiota is basically composed by normal or transient inhabitants of the oral cavity, it is possible that similar events occurring in dental plaque formation occur as well during the establishment of biofilms in root canals. Nevertheless, main differences are based on the regulatory factors that interplay in the selection of root canal bacteria. This lecture will provide an overview of these selective factors, which not only deem the root canal biofilm as special, but are of importance to understand their recalcitrance and will aid in finding new ways of treatment.



*Biography:*  
Luis obtained his dental degree in 1998 from the University of San Marcos in Lima, Peru. After moving to Gothenburg, Sweden, he obtained a Master of Science in Odontology in 2000 and a Doctoral degree (PhD) in 2005 with the thesis entitled 'On Bacteria Persisting Root Canal Infections'. His master and doctoral works was completed at the Department

of Oral Microbiology and the Department of Endodontology at Gothenburg University. From 2005 until 2011, Luis was a postdoctoral researcher and a research assistant at the Department of Oral Biology at Malmö University. During his postdoctoral research work, Luis worked intensely on oral microbial biofilms, different aspects of the physiology of oral microbial communities and specific microbial stress responses. Luis has authored several publications with high citation ranks, textbook chapters and is the editor of the book 'The Root Canal Biofilm'. Luis is recurrently invited to lecture for endodontic societies and endodontic group studies where he covers microbial aspects of persisting root canal infections and microbial biofilms. From 2011 until 2013 he undertook the clinical training program in Endodontics at the University of Connecticut Health Center. Luis has moved back to Sweden where he practices clinical endodontics.

## A clinical serial case study for the PAD in teeth associated with apical periodontitis - Evaluated by Matrix-Assisted Laser Desorption/Ionization Time of Flight (MALDI-TOF)

**Speaker: Sune Demant, PhD student, DDS, Copenhagen University**

Does photo activated disinfection (PAD) has the potential to replace or act as an adjunctive to conventional chemomechanical debridement (CMD) for the treatment of necrotic pulp and apical periodontitis? Several in vitro approaches have tested and made comparisons, however, fewer attempts have been given to an actual clinical test scenario. In this presentation a clinical case study will be presented using a PAD procedure. Single rooted teeth with pulpal necrosis and associated periradicular radiolucencies received a conventional chemomechanical protocol followed by photo activated disinfection (PAD). Microbiological samplings was carried out and diagnoses were performed by traditional methods and Matrix-Assisted Laser Desorption/Ionization Time Of Flight (MALDI-TOF). After photo activated disinfection, 2 samples out of 14 (14,3%) showed growth of Staphylococcus species as well as gram positive rods. Both the microbial and clinical results will be further discussed. However, results from the incubation and microbiological analysis of root canal samples neither proves nor rejects the possible effect of PAD in a clinical setting.



### *Biography:*

Sune Demant was born 25th of may 1983 in Odense, Denmark. Graduated from Copenhagen School of Dentistry the summer of 2011, and has since focused his career on endodontics, both clinically by limiting his clinical work to endodontic procedures, as well as academically by doing his PhD at the School of

Dentistry, University of Copenhagen, carrying out research on inflammatory modulation of tertiary dentinogenesis. During his studies Sune Demant has spend time at Université de Paris, Denis Diderot, France, as well as at King's College London. Academically Sunes main focus is hard tissue formation/regeneration as well as biomineralization in general.

## The effect of LED illumination on endodontic biofilm

**Speaker: Merete Markvart, DDS, Ph.D.**

Within endodontics photodynamic therapy (PDT) has been suggested as a disinfectant procedure during root canal treatment. A photoactive dye (photosensitizer), methylene blue or toluidine blue, are activated by a light source, usually lasers or light emitting diodes (LEDs), thereby forming free oxygen radicals supposing to kill the bacteria. New ultraviolet (UV) LEDs may be used without a photosensitizer. A recent study compared the killing efficacy of UV irradiation with an existing PDT on *Enterococcus faecalis* biofilm. UV irradiation was provided using UV LEDs on the biofilms, in the UVB (296nm) and UVC (266nm) region. The PDT was applied using the commercial product Fotosan®. The UV LEDs were able to eliminate the *E. faecalis* biofilm while the PDT was only able to make a reduction in the total number of viable cells. UV LEDs may improve disinfection procedures during root canal treatments.



### *Biography:*

In 2005 Merete Markvart graduated as a Dentist from the University of Copenhagen, Denmark. In 2011 she defended her PhD entitled: 'Biomechanical root canal preparation, morphological and microbiological challenges'. From 2005-2014 she has been employed in both private practice and within

municipal dental care, and since 2014 she has been full time Assistant Professor at the Section of Cariology and Endodontics, Department of odontology, University of Copenhagen.

Merete is involved in the planning and teaching of pregraduate students in Endodontics, and she is also connected to the Special Clinical Unit receiving endodontic referrals. Her scientific areas of focus are: Prevention and treatment of endodontic infection - Endodontic preparation techniques – Root morphology – Endodontic microbiology. Merete is also a part of the Endo RECO, research network cooperation between the Endodontic departments in Copenhagen, Malmo and Gothenburg.



## The clinical evidence of PAD in Endodontics

**Speaker: Helena Fransson, Associate Prof., Ph.D., Malmö University**

A device or method may show an effect on, for instance the ability to reduce bacterial counts, in an experimental laboratory setting. In order to claim a device or method to have effect in the clinical setting, caring for patients, there is need for other types of studies. In order to show a treatment effect in the clinical setting, such a study needs an appropriate control group and preferable be set up as a randomised trial in order to minimize the risk for other factors than the treatment itself to affect the results. In addition, it is important to reduce biases, that is, factors that systematically will affect the results. The presentation will focus on the current clinical evidence for the use of photo-activated disinfection (PAD) by presenting and critically appraising results from all available studies which have studied clinical outcomes after using PAD within the field of endodontics.



### *Biography:*

Helena Fransson became a specialist in Endodontics in 2007 at the Faculty of Odontology, Malmö University, Sweden where she has been employed at different positions since 2001. In 2012 she obtained her PhD after defending her thesis "On the repair of the dentin barrier" from the Departments of Endodontics and Oral biology,

which focussed on the hard tissue formation after dental pulp capping. Currently she has a full-time position as assistant professor at the Department of Endodontics where the time is devoted to teaching both under- and postgraduate students, clinical work and research. She has published a number of publications in peer-reviewed scientific journals covering topics such as treatment of deep caries and outcome of endodontic treatments including a number of systematic reviews.

## The "deep caries" challenge – Prevalence and management of deep carious lesions in Northern Norway

**Speaker: Lina Stangvaltaite, DDS, Ph.D., UiT The Arctic University of Norway**

The dilemma how to manage deep carious lesions can be traced back till XVIII century and is not solved yet. Variety of scientific evidence, traditions, and new materials introduced in the market cause permanent confusion among dental professionals regarding the choice of the best management strategy of deep carious lesions. This problem also exists in Northern Norway. The prevalence of treated and untreated deep carious lesions is relatively high in the area as every fourth of 18-year-old in Troms County has the condition. Various management options are available for deep carious lesions. General dental practitioners in Northern Norway, as in the rest of the world, do not agree on the best management method. This is mainly due to the lack of scientific evidence, especially for adults. It is already known, that patients benefit the most from the less invasive options. But which one is the best? The challenge also remains when a pulp is exposed in connection to a deep carious lesion in adult teeth: to perform pulpectomy or to preserve tooth vitality. There is an increasing number of publications, supporting vital pulp therapy for carious exposures. Are they also valid for adults? Contemporary evidence will be discussed trying to find an answer on how to manage "deep caries" in adults in the best way.

### *Biography:*

Dr Lina Stangvaltaite is currently an associate professor in Cariology field. She had her dental training in Lithuania and Finland. After being a dental practitioner for several years, Dr Lina pursued PhD studies in Norway. During her doctoral period, Dr Lina was invited to the World Health Organization for a research project. Her main research



interest is prevention, as caries is a preventable condition: prevention of caries in general and prevention against losing tooth vitality in case of deep carious lesion. Therefore, in Norway Dr Lina was a principal investigator in a multi-national research regarding preferred management of deep carious lesions. Dr Lina is also a practicing dentist, and logically her research is practice oriented. Dental education is a shaping force for students' future dental philosophy. Dr Lina devotes also strong attention in her teaching, where she focuses on applying research in dental practice.



## CBCT and how its technical aspects can influence the diagnostic outcome

**Speaker: Rubens Spin-Neto, DDS, MSc, PhD, Aarhus University'**

In this lecture, the diverse parameters related to CBCT image acquisition and reconstruction will be presented and discussed, in face of their possible interference in the diagnostic outcome. Technical features, such as voxel resolution and the definition of proper fields-of-view are topic already well-known by the dentist, but the major drawback which is rarely discussed in terms of clinical interference are the image artefacts. Learning how to deal with those artefacts which cannot be totally eliminated (e.g. noise and metal-related artefacts), and how to understand those which can be somehow avoided by the Dentist (e.g. patient motion artefacts) will be one of the main aims of the lecture.



### *Biography:*

Dentist, graduated in 2005 in the State University of São Paulo (Brazil). Has as MSc (2008) and PhD (2011) degree in Periodontology, also from the State University of São Paulo (Brazil), and a PhD in Oral Radiology, from Aarhus University. Has been involved in research in the past 11 years, and is currently working as Assistant Professor at the Session of Oral Radiology, Department of Dentistry, Aarhus University.

## CBCT used in endodontics – where are we today?

**Speaker: Casper Kruse, PhD student, DDS, Aarhus University**

Cone Beam CT (CBCT) is widely used in many fields of dentistry today. In endodontics the use is promising for many diagnostic tasks and in treatment planning. Through clinical examples and current literature, the lecture aims to discuss both the advantages and limitations of the contemporary use of CBCT in endodontics.



### *Biography:*

Casper Kruse (PhD student, DDS) received his degree in dentistry in 2005 from the School of Dentistry, Aarhus University. After graduating he worked full-time in private practice with endodontics as a special field of interest. From 2009-2014 he worked part-time as clinical instructor at the School of Dentistry, Aarhus University. In 2014 he was enrolled as PhD student working interdisciplinary with endodontics and oral radiology

with main focus on the use of Cone Beam CT for diagnosis of apical periodontitis. Further he is a part of the team, under the Danish Health Authorities, that certifies Danish dentists to the use of Cone Beam CT. In 2014 he received the Young Investigator Research Grant from European Society of Endodontology, and since 2015 Casper Kruse has been board member of the Danish Endodontic Society.

## CBCT used for endodontic guide splints

*Speaker: Jørgen Buchgreitz, DDS*

**F**or several years it has been known that CBCT can be used as a planning tool for implantology and for endodontology.

By combining CBCT with a surface scan (e.g. Cerec) it is furthermore possible with the help of CNC technology to produce guide rails to be used for the placing of implants. The same combination of CBCT, Cerec and guide rails can be used for lokalizing and treating partly obliterated root canals on the assumption that the accuracy is sufficient. For that reason we did a row of guided test drillings on extracted teeth to investigate the accuracy.

The conclusion was, that the method could be a substantial help at lokalizing and treating partly obliterated root canals. At the lecture the results of these test drillings will be shown. Since the method now has been in use some years at our clinic a practical procedure will be demonstrated. likewise the practical experiences and the limitations of the method will be mentioned.



### *Biography:*

Jørgen Buchgreitz  
1964 cand. odont.  
1967 - private general practice  
2001 - private practice, limited to endodontology  
JB has given numerous lectures in Denmark and abroad about prosthodontics. Especially the subjects occlusion, function and estetics. Since 2001 the lectures exclusively have been about rootcanal treatment



## Aspects of treating calcified canals

**VDW Gold Sponsor Sponsor Speaker: Dr. David Sonntag**

Orthograde treatment of a root canal system that looks calcified in the radiograph is a challenge to every dentist. Consequently, careful planning is a basis for successful treatments of such canals. Calcification develops from coronal to apical and is therefore worst in the coronal third of roots. The importance of thoughtful straight line access cavity preparation of narrow canals cannot be overestimated.

During initial instrumentation, the canal can easily be blocked or steps may be created because of insufficient removal of debris. Using a sequence of manual instruments in combination with rotating or reciprocating NiTi files has hereby shown to be the most successful method. Nevertheless, even with the use of state of the art instruments potentially infected debris is pushed in lateral canals and isthmuses. Removing debris as early as possible by activating NaOCl is a clue to keep canals negotiable, disinfected and easy to shape. Additionally narrow canals increase the risk of high stress in the root canal resulting in microcracks during enlargement.

The aim of this lecture is to give an idea on how to deal with complicated canal systems in daily practice and how to choose the right instruments and strategy to shape and clean calcified canals to full working length successfully.



*Biography:*

Dr. David Sonntag graduated from the University of Marburg, Germany in 1998 and received his degree in Dentistry (Dr. med dent) in 2001. He is a specialist in Endodontics (2005) Certified Member of the European Society of Endodontology (ESE) and member other national and international Associations.

After finishing his habilitation he became a private docent of Marburg University in 2008.

Currently Dr. Sonntag is the director of the Master Study Program in Endodontology at Düsseldorf University; Assistant Professor in the department of Conservative Dentistry, Periodontology and Endodontology at Düsseldorf University and works part time in his private dental office, limited to Endodontics in Marburg.

Dr. Sonntag has published in national and international journals and lectures both nationally and internationally. His major research interests include root canal preparation, decontamination of endodontic instruments and undergraduate dental education.



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## CBCT, more than just an additional diagnostic tool

**Dentsply Sirona Silver Sponsor Speaker: Dr. Marco Georgi**

In the last decade CBCT became more and more important in radiographic endodontic diagnostics. Today the usefulness of the CBCT is unequivocal and it is a valuable imaging modality, providing maximal information to the clinician. Dentists and Specialists for Endodontology use it routinely for diagnosing root canal anomalies, dental periapical pathosis, pathosis of nonendodontic origin, assessment of endodontic treatment complications, diagnosis and management of dentoalveolar trauma, localization and differentiation of root resorption and surgical case planning. The next step of using CBCT in endodontics is active endodontic treatment planning. Enabling clinicians to focus on shape, curvature angle, extend, diameters, precise localization of handicaps and the instrument they plan to use, before starting the treatment.



*Biography:*

Dr. Marco Georgi is working as a specialist in Endodontology at his private clinic "Praxis am Kureck" Wiesbaden and "ENDOPUR" private clinic for endodontics and endodontic surgery in Frankfurt/M. He received his Master of Science Endodontology from the Heinrich Heine University Düsseldorf. He received his certificate as a "Specialist

of Endodontology (DEGT)" and got Certified Member of the European Society of Endodontology. Since 2013 he is the Scientific Director of the endodontic education of the dental chamber of federal state Hessen (FAZH), and is member of the Scientific management of the endodontic education of the Austrian endodontic Society (ÖGE). For the past 14 years he has been a national and international speaker and course instructor in the whole field of Endodontics. 2003 the VDZE "Association of German certified Endodontists" was partly founded by him as the founding president. From 2005 to 2010 he was executive board member of the "AGET/DGZ", and is the author of several publications in the subject of Endodontology.



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