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## Career

2018-Present Visiting Research Fellow, University of Western Australia, Perth, Australia  
2017-Present Co-Founder, Particle3D ApS, Odense, Denmark  
2014-Present Associate Professor, University of Southern Denmark, Odense, Denmark  
2012-2013 Consultant, Danish Technological Institute, Hoeje Taastrup, Denmark  
2009-2012 Postdoc, Aarhus University, Aarhus, Denmark  
2009 Visiting Scholar, University of Nebraska Medical School, Omaha, USA

## Education

2005-2009 PhD in Nanoscience and Molecular Biology, Aarhus University, Denmark  
2005 MSc Courses in Chemistry and Molecular Biology, Aarhus University, Denmark  
2004 MSc Courses, University of Manchester, Manchester, UK  
2001-2004 BSc in Chemistry and Molecular Biology, Aarhus University, Aarhus, Denmark

## Publications

### **Treating mouse skull defects with 3D printed fatty acid and tricalcium phosphate implants**

Bonde Jensen, M., Slots, C., Ditzel, N., Kolstrup, S. H., Kasse, M., Thygesen, T. & Andersen, M. Ø., Dec 2020, In: Journal of Tissue Engineering and Regenerative Medicine. 14, 12, p. 1858-1868

### **Falcarindiol Purified from Carrots Leads to Elevated Levels of Lipid Droplets and Upregulation of Peroxisome Proliferator-Activated Receptor- $\gamma$ Gene Expression in Cellular Models**

Andersen, C. B., Runge Walther, A., Pipó-Ollé, E., K. Notabi, M., Juul, S., Eriksen, M. H., Lovatt, A. L., Cowie, R. H., Linnet, J., Kobæk Larsen, M., El-Houri, R., Andersen, M. Ø., Hedegaard, M. A. B., Christensen, L. P. & Arnspang, E. C., 28. Aug 2020, In: Frontiers in Pharmacology. 11, 11 p., 565524.

### **Simple Defocused Fiber-Optic Volume Probe for Subsurface Raman Spectroscopy in Turbid Media**

Runge Walther, A., Andersen, M. Ø., Dam, C., Karlsson, F. & Hedegaard, M. A. B., Jan 2020, In: Applied Spectroscopy. 74, 1, p. 88-96

### **Antibody conjugated solid lipid nanoparticles as a targeted drug delivery system for hydrophobic pharmaceuticals**

K. Notabi, M., Arnspang, E. C. & Andersen, M. Ø., 20. Aug 2019, (Submitted) In: Molecular Pharmaceutics.

### **Patient-specific 3D printed plates improve stability of Le Fort 1 osteotomies in vitro**

Stokbro, K., Wiatr Borg, S., Andersen, M. Ø. & Thygesen, T., 1. Mar 2019, In: Journal of Cranio-Maxillofacial Surgery. 47, 3, p. 394-399

### **Uptake of New Lipid-Coated Nanoparticles Containing Falcarindiol by Human Mesenchymal Stem Cells**

Pipó-Ollé, E., Walke, P., Notabi, M., El-Houri, R., Andersen, M. Ø., Needham, D. & Arnspang, E. C., 10. Feb 2019, In: Journal of Visualized Experiments. 144

### **Co-delivery of siRNA and etoposide to cancer cells using an MDEA esterquat based drug delivery system**

Popova, P. G., Notabi, M., Code, C., Arnspang, E. C. & Andersen, M. Ø., Jan 2019, In: European Journal of Pharmaceutical Sciences. 127, p. 142-150

**Composites of fatty acids and ceramic powders are versatile biomaterials for personalized implants and controlled release of pharmaceuticals**

Bonde Jensen, M., Slots, C., Ditzel, N., Albrektsen, O., Wiatr Borg, S., Thygesen, T., Kassem, M. & Andersen, M. Ø., Jun 2018, In: *Bioprinting*. 10, e00027.

**Development of a real-time motor-imagery-based EEG brain-machine interface**

Gorjup, G., Vrabic, R., Stoyanov, S., Andersen, M. Ø. & Manoonpong, P., 2018, *Neural Information Processing: 25th International Conference, ICONIP 2018*. Cheng, L., Leung, A. C-S. & Ozawa, S. (eds.). Springer, p. 610-622 (Lecture Notes in Computer Science).

**Simple additive manufacturing of an osteoconductive ceramic using suspension melt extrusion**

Slots, C., Bonde Jensen, M., Ditzel, N., Hedegaard, M. A. B., Borg, S. W., Albrektsen, O., Thygesen, T., Kassem, M. & Andersen, M. Ø., 2017, In: *Dental Materials*. 33, 2, p. 198–208

**The Application of Nanotechnology for Implant Drug Release**

Andersen, M. Ø., 2016, *Nanomedicine*. Howard, KA., Vorup-Jensen, T. & Peer, D. (eds.). Springer, p. 311-342 (Advances in Delivery Science and Technology).

**Co-delivery of siRNA and doxorubicin to cancer cells from additively manufactured implants**

Chen, M., Andersen, M. Ø., Dillschneider, P., Chang, C-C., Gao, S., Le, D., Yang, C., Hein, S., Bünger, C. & Kjems, J., 16. Nov 2015, In: *R S C Advances*. 5, p. 101718-101725

**Chemical surface functionalization of bulk poly (p-phenylene sulfide) yields a stable sulfonic acid catalyst**

Zwettler, N., Engbæk, J., Lundsgaard, R., Paranoska, I., Nielsen, T., Clyens, S., Christiansen, J. & Andersen, M. Ø., 2015, In: *Reactive and Functional Polymers*. 88, March, p. 47-54 7 p.

**MicroRNA Functionalized Microporous Titanium Oxide Surface by Lyophilization with Enhanced Osteogenic Activity**

Wu, K., Song, W., Zhao, L., Liu, M., Yan, J., Andersen, M. Ø., Kjems, J., Gao, S. & Zhang, Y., 4. Mar 2013, In: *A C S Applied Materials and Interfaces*. 5, 7, p. 2733–2744 11 p.

**Spatially controlled delivery of siRNAs to stem cells in implants generated by multi-component additive manufacturing**

Andersen, M. Ø., Le, D. Q. S., Chen, M., Nygaard, J. V., Kassem, M., Bünger, C. & Kjems, J., 2013, In: *Advanced Functional Materials*. 23, 45, p. 5599-5607 9 p.

**The role of MicroRNAs in natural tissue development and application in regenerative medicine**

Andersen, M. Ø., Dillschneider, P. & Kjems, J., 2013, *RNA Interference from Biology to Therapeutics*. Howard, K. A. (ed.). Springer, p. 57-78 22 p. (Advances in Delivery Science and Technology).

**RNA Interference Enhanced Implants**

Andersen, M. Ø. & Kjems, J., 2011, *Active Implants and Scaffolds for Tissue Regeneration*. Zilberman, M. (ed.). Springer, p. 145-165 20 p. (Studies in Mechanobiology, Tissue Engineering and Biomaterials, Vol. 8).

**siRNA nanoparticle functionalization of nanostructured scaffolds enables controlled multilineage differentiation of stem cells**

Andersen, M. Ø., Nygaard, J. V., Burns, J. S., Raarup, M. K., Nyengaard, J. R., Bünger, C., Besenbacher, F., Howard, K. A., Kassem, M. & Kjems, J., 1. Nov 2010, In: *Molecular Therapy*. 18, 11, p. 2018-27

**Surface functionalisation of PLGA nanoparticles for gene silencing**

Andersen, M. Ø., Lichawska, A., Arpanaei, A., Jensen, S. M. R., Kaur, H., Oupicky, D., Besenbacher, F., Kingshott, P., Kjems, J. & Howard, K. A., Jul 2010, In: *Biomaterials*. 31, 21, p. 5671-5677 7 p.

**RNAi using a chitosan/siRNA nanoparticle system: In vitro and in vivo applications.**

Andersen, M. Ø., Howard, K. A. & Kjems, J., 2009, *Therapeutic Applications of RNAi: Methods and Protocols*. Reidhaard-Olson, J. F. & Rondinone, C. M. (eds.). Humana Press, p. 77-86 9 p. (Methods in Molecular Biology, Vol. 555).

### **Investigation of particle-functionalized tissue engineering scaffolds using X-ray tomographic microscopy**

Nygaard, J. V., Andersen, M. Ø., Howard, K. A., Foss, M., Bünger, C., Kjems, J. & Besenbacher, F., 1. Jul 2008, In: *Biotechnology and Bioengineering (Print)*. 100, 4, p. 820-9 10 p.

### **Delivery of siRNA from lyophilized polymeric surfaces**

Andersen, M. Ø., 24. Oct 2007, In: *Biomaterials*. 29, 4, p. 506–512 6 p.

### **The influence of polymeric properties on chitosan/siRNA nanoparticle formulation and gene silencing**

Liu, X., Howard, K. A., Dong, M., Andersen, M. Ø., Rahbek, U. L., Johnsen, M. G., Hansen, O. C., Besenbacher, F. & Kjems, J., 2007, In: *Biomaterials*. 28, 6, p. 1280-8 8 p.

### **RNA interference in vitro and in vivo using a novel chitosan/siRNA nanoparticle system**

Howard, K. A., Rahbek, U. L., Liu, X., Damgaard, C. K., Glud, S. Z., Andersen, M. Ø., Hovgaard, M. B., Schmitz, A., Nyengaard, J. R., Besenbacher, F. & Kjems, J., 10. Jul 2006, In: *Molecular Therapy*. 14, 4, p. 476–484 8 p.

## **Patents**

### **Device for capturing microorganisms from the environment**

Andersen, M. Ø., Østergaard Andersen, M. J., Whiteley, A. & Moreira-Grez, B., 2020, (Submitted) Patent No. 20163020.9

### **Moulding and Casting of Composites**

Andersen, M. Ø., Bonde Jensen, M. & Slots, C., 11. Oct 2018, IPC No. A61L 27/ 58 A I, Patent No. WO2018185302, Priority date 7. Apr 2017, Priority No. EP20170165441

### **Feedstock for 3D printing and uses thereof**

Andersen, M. Ø., Bonde Jensen, M. & Slots, C., 13. Apr 2017, Patent No. WO2017059866 (A2), WO2017059866 (A3), 13. Apr 2017, Priority date 9. Oct 2015, Priority No. DKPA201570645

### **Process for Modifying the Surface Morphology of a Medical Device**

Le, D. Q. S., Andersen, M. Ø., Baatrup, A., Chen, M., Chen, M., Lysdahl, H., Besenbacher, F., Bünger, C. & Kjems, J., 27. Jun 2013, Patent No. PCT/DK2012/050507, 23. Dec 2011

### **Dehydrated chitosan nanoparticles**

Andersen, M. Ø., Besenbacher, F., Kjems, J. & Howard, K., 9. Jan 2009, Patent No. PCT/DK2008/050171, 6. Jun 2007

## **Conference Items**

### **The Application of 3D Printing and Nutrient/Biomaterial Microhabitats for In Situ Enrichment of Microbial Cultures**

Andersen, M. Ø., Moreira-Grez, B., Østergaard Andersen, M. J. & Whiteley, A., 19. Apr 2020, In: *The FASEB Journal*. 34, S1

### **Antibody Conjugated Nanoparticles Solid Lipid Nanoparticles as Drug Delivery Systems for Hydrophobic Pharmaceuticals in Cancer Therapy: Synthesis, Uptake, and Effect**

K. Notabi, M., Arnsfang, E. C. & Andersen, M. Ø., 15. Dec 2019, In: *Molecular Biology of the Cell*. 30, 26

### **3D printing of nutrient biomaterial microhabitats for microbial capture**

Andersen, M. Ø., Moreira-Grez, B. & Whiteley, A., Feb 2019.

### **Solid Lipid Nanoparticles as Drug Delivery Systems for Cancer Therapy: Uptake and Effect of Antibody Conjugated Nanoparticles.**

Notabi, M. K., Andersen, M. O. & Arnsfang, E. C., 15. Dec 2018, In: *Molecular Biology of the Cell*. 29, 26, 1 p.

**Bioactive implants: RNA interference as a tool to direct stem cell differentiation.**

Dillschneider, P., Andersen, M. Ø., Kjems, J. & Kassem, M., 2012, In: Journal of Tissue Engineering and Regenerative Medicine. 6, S1, p. 292 1 p., 49.P05.

**Controlling drug release spatially and temporally in scaffolds**

Andersen, M. Ø., Nygaard, J. V., Le, D. Q. S., Burns, J., Raarup, M. K., Chen, M., Howard, K. A., Bünger, C., Kassem, M. & Kjems, J., 2012, In: Journal of Tissue Engineering and Regenerative Medicine. 6, S1

**Carrier Matrix for siRNA-Mediated Gene Knock Down to Promote Neuronal Regeneration.**

Hartmann, H., Lakner, U., Andersen, M. Ø., Kjems, J., Howard, K. A. & Schloßhauer, B., 2009, In: Tissue Engineering. Part A. Tissue Engineering. 3, p. 718

**Polycaprolactone nanomesh cultured with hMSC evaluated by synchrotron tomography**

Nygaard, J. V., Andersen, M. Ø., Cloetens, P., Foss, M., Kassem, M., Kjems, J. & Besenbacher, F., 2009. 1 p.

**Nanoscaffolds for Drug Delivery and Tissue Engineering**

Nygaard, J. V., Andersen, M. Ø., Cloetens, P., Foss, M., Kassem, M., Kjems, J. & Besenbacher, F., 2008.

**Localized Delivery of Lyophilized siRNA polyplexes**

Bak, R. O., Andersen, M. Ø., Howard, K. A. & Kjems, J., 2007. 1 p.

**Surface delivery of siRNA for implants**

Andersen, M. Ø., Nygaard, J. V., Howard, K., Bak, R. O., Paludan, S. R., Raarup, M. K., Besenbacher, F. & Kjems, J., 2007, In: European Cells & Materials. 14, 3, p. 118 1 p.

**Grants**

Solid Lipid Implant Testing in a Large Animal Model of Bone Resection  
2017-2018, DKK 497.700, Main Applicant, from the Novo Nordisk Foundation

Endolith Bioculture in 3D Printed Environments (EndoBio3D)  
2018-2020, DKK 1.713.500, Main Applicant, from the Villum Foundation

In Situ Raman Analysis of Resorbable and Drug Loaded 3D Printed Implants  
2017-2020, DKK 2.570.400, Co-Applicant, From the Danish Council for Independent Research | Technology and Production Sciences

Research on Additive Manufacturing of Metal, Ceramic and Composite Structures using the Direct Ink Writing Method  
2015-2017, DKK 60.000, From the Hartmann Foundation