

## NOTAT

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<b>Til:</b>	Fakultetsstyret	
<b>Fra:</b>	Fakultetsdirektøren	
<b>Kopi:</b>	Vararepresentantene, instituttene, fak.adm.ledelse	
<b>Gjelder:</b>	KUNNGJØRING – 2 STILLINGER SOM POSTDOKTORER EKSTERNT FINANSIERT AV NFR (BIONANNOR)	
<b>Møte:</b>	<b>SIRKULASJON I FAKULTETSSTYRET</b>	
<b>Saksbehandler:</b>		
<b>Dato:</b> 10.06.19	<b>Signatur:</b>	<b>Saksnummer:</b>

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**Forslag til vedtak**

Fakultetsstyret slutter seg til anbefalingen fra Institutt for klinisk odontologi og godkjenner kunngjøringstekst for to postdoktorstillinger ved Avdeling for Biomaterialer, Institutt for klinisk odontologi.

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Det skal tilsettes i følgende to eksternt finansierte postdoktorstillinger

- Fibre Technology – ansettelsen skal ha varighet 2,5 år og
- Hydrogel Technology – ansettelsen skal ha varighet i 2 år.

Stillingene er eksternt finansierte gjennom NFR prosjektet BioNanNor.

Ansettelse i åremålsstilling er midlertidig, jf. statsansatteloven § 10 (3), jf. § 17 (2) og forskrift til statsansatteloven § 5 (4)

Vedlagt følger kunngjøringstekst

Til:  
OD  
OD IKO    Institutt for klinisk odontologi

Dato:        20.05.2019  
Saksnr.:    2019/5804 MDNESTEB

Unntatt offentlighet: offl § 25

**IKO styremøte 21.5.2019 - stillingsbeskrivelse/kunngjøring - 2x postdoktorstillinger**  
**NOTAT**

**Til**                                **IKO – styremøte 21.5.19**  
**Fra**                                **Instituttleder**  
**Kopi:**                              **Fak.adm.ledelse**  
**Gjelder**                            **Kunngjøring – 2 ledige stillinger som postdoktor. Stillingene er finansiert gjennom NFR. (BioNanNor)**

Det foreslås kunngjøring av 2 ledige postdoktorstillinger ved Avd for biomaterialer –  
**position 1** – Fibre Technology – ansettelsen skal ha varighet 2,5 år og  
**position 2** – Hydrogel Technology – ansettelsen skal ha varighet i 2 år.

BIOMAT er blitt tildelt flere NFR prosjekter. Det første prosjektet som det er nå ønskelig lyse ut er Prosjektet «A Bioactivated NANO-layered Hydrogel for Dermal Regeneration in Hard-to Heal Ulcers» (BIONANOR).

For mer detaljert beskrivelse vises det til det vedlagte forslaget til kunngjøringen.

**Økonomiske begrunnelser:**

Begge stillingene skal finansieres gjennom NFR prosjektet til BioNanNor.

**Forslag til vedtak:**

Styret ved IKO anbefaler det fremlagte forslaget til kunngjøringstekst.

Hjemmel for midlertidighet er:



Ansettelse i åremålsstilling er midlertidig, jf. statsansatteloven § 10 (3), jf. § 17 (2) og forskrift til statsansatteloven § 5 (4)

Instituttleder  
Jan Eirik Ellingsen

Vedlegg:

- Forslag til kunngjøring
- Budsjett – ansvar - instituttleder

Dette dokumentet er godkjent elektronisk ved UiO og er derfor ikke signert.

Saksbehandler:  
Maria Nesteby  
+4722844686, m.d.h.nesteby@medisin.uio.no



## 2 Post-doctoral research fellow positions in Tissue Engineering (Fibre technology and hydrogels)

### About Department of Biomaterials, Institute of Clinical Dentistry

[Department of Biomaterials](#) has a multidisciplinary team of researchers trained in molecular biology, cell biology, odontology, medicine, microbiology, biochemistry, chemistry and materials science dedicated to research focusing on development or modification of biomaterials, bone regeneration and integration of biomaterials into bone and related hard tissues. The group consist of three professors, two post docs and 10 PhD students.

**The one fellowships period is for 2.5 years (fibre technology) and one fellowship (hydrogel) for two years where 100 % is designated research.**

### Job description

Your main research responsibilities will be related to the project "A Bioactivated Nano-layered Hydrogel for Dermal Regeneration in Hard-to-Heal Ulcers" with the acronym BioNaNOR. This is a Research Council of Norwegian (RCN) Nano2021 grant number 287991 financed project, started on 01.04.2019, coordinated by the University of Oslo with partners from The University of Manchester (Prof. Jonny Blaker) and University of Aveiro (Prof João F. Mano).

The ultimate goal in tissue engineering for wound healing is to produce a material that promotes complete and scar free regeneration of a functional outer barrier (e.g. mucosa or skin). In humans, mucosa and skin represents about one seventh of the body mass. Almost any trauma, infection or surgical procedure involve breaking this outer barrier and produce an ulcer. In healthy persons and under normal conditions, skin and mucosa rapidly regenerate and restore tissue integrity with complete epithelial coverage. Should however the situation be challenged by extensive trauma, burns, infections, chronic inflammation, metabolic disease or other pathologies the result are ulcers that heal very slowly or not at all, often with debilitating or even life-threatening consequences to the patient. The BioNaNOR project aims at using a dermis-matrix-mimicking hydrogel based on nano-layered and chemically modified chitosan. This artificial dermis analogue will be designed with one "deeper" part that will provide biological signals for the guidance and differentiation of mesoderm derived stem cells, and a "superficial" part that includes molecules that stimulate epithelial cell growth and migration. The nano-layered chitosan matrix is biodegradable and will ultimately be replaced by natural dermal tissue that is later covered by epidermis. During this process, the material will slowly release the embedded bioactive molecules together with chitosan metabolites that are known to favour healing by reducing inflammation and suppressing bacterial growth.

This project proposes a tissue engineering and nanotechnology approach to overcome current therapies limitations.

- Earliest starting date is August 1st 2019.
- **Position 1:** The work will be conducted at mostly at University of Manchester but also at Department of Biomaterials, University of Oslo.
- **Position 2:** The work will be conducted at mostly at University of Aveiro but also at Department of Biomaterials, University of Oslo.

### More about the positions

We are looking for an excellent researcher with interest in experimental studies of cell-material interactions. In particular, we are currently recruiting a person with experience in the following techniques:

#### Position 1, Fibre Technology

- Experience in spinning of sub-micron fibres, ideally by solution blow spinning polymer/polypeptide fibre/fibre mat production and their characterisation is essential.
- Knowledge of rheological characterisation, microfluidics, wet-fibre processing/sub-micron fibre - electrospinning or solution blow spinning is desirable
- Experience with the chemical modification of biomaterials and formulation development, preferably chitosan
- Evaluation of fibre/fibre mat morphological and mechanical properties, preferably with experience in dry and in vitro (wet) mechanical testing, and scanning electron microscopy
- Characterization of biomaterial and gradient fibre mats/fibres
- Planning, supervision, conducting and evaluating in vitro experiments, and preferably in vivo experiments

#### Position 2, Hydrogel Technology

- Experience with the chemical modification of biomaterials and formulation development, preferably chitosan
- Experience in synthesis and production of hydrogel
- Knowledge of hydrogel characterisation such as rheological and mechanical properties
- Knowledge of evaluation of in vitro biological hydrogel performance and preferably in vivo experiments

Note that a strong biomaterials background is required. You are expected to be involved in all parts of the project, including: experimental design, sample design and preparation, data acquisition and analysis, publications, research supervision and management, the preparation of proposals and applications to external bodies, e.g. for funding and contractual purposes.

**Position 1:** Most of the work of fibre production will be performed with the partner in Manchester, UK and you are therefore expected to spend time with this partner. There will also be travels to the other partners in Aveiro, Portugal.

**Position 2:** Most of the work of fibre production will be performed with the partner in Aveiro, Portugal and you are therefore expected to spend time with this partner. There will also be travels to the other partners in Manchester, UK.

## Qualification requirements

In assessing the applications, special emphasis will be placed on the assumed academic and personal ability on the part of the candidates to complete the project within the given time frame and publish articles in recognized international journals. Travel and research stays at partner institutions is expected.

To qualify for this research position you must have completed a PhD degree in tissue engineering, chemistry, biotechnology or biochemistry, materials science, chemical or materials engineering or equivalent. You may also apply if the doctoral dissertation has been submitted and approved by the evaluation committee before the application deadline.

- Fluent oral and written communication skills in English (evt.) and a Scandinavian language.

The following qualifications will count in the assessment of the applicants:

A strong biomaterials background is required and an excellent command of English is a prerequisite.

The successful candidate should have documented experience in most of the areas described in the bullet points above.

## Personal skills

The successful candidate has the ability to work in a structured and independent manner, and works well in cooperation with others. Excellent communication and academic writing skills are essential to the position. Excellent time management and organizational skills. Flexible approach to dealing with research problems as they arise. Ability to contribute to broader management and administrative processes.

Candidates with well-established international research network and strong track record will be preferred.

## We offer

- A friendly and international working environment
- An exciting research environment with a multidisciplinary profile, multicultural working environment and excellent opportunities for academic development
- Collaborations with some of the forefront biomaterial research groups in Europe
- Position code 1352: NOK 523 200 to NOK 552 800 per year, depending on qualifications and seniority
- [Favourable pension arrangements](#)
- [Attractive welfare arrangements](#)

## How to apply

The application must include: (Please refer whether you apply to **position 1 or 2**)

- Application letter stating how the candidate can contribute to the project and how she/he fits the description of the person we seek
- CV summarizing education, positions held, details of academic work, pedagogical and administrative experience and other qualifying activities
- List of publications
- Copies of educational certificates and transcripts of records
- 2 letters of recommendation
- 2 additional references, with address, telephone number, email and relationship stated
- Documentation of English Proficiency, if educated in a non-English speaking institution. The English proficiency requirements are the same as for admission to the master's programmes at UiO, and must be documented: <http://www.uio.no/english/studies/admission/master/english-proficiency-master.html>

An expert committee will review all applications.

The application with attachments must be delivered in our electronic recruiting system. Foreign applicants are advised to attach an explanation of their University's grading system. Please note that **all documents** should be in English (or a Scandinavian language).

In assessing the applications, special emphasis will be placed on the documented, academic qualifications, the project description (whenever this is required in the call for applicants), and the quality of the project as well as the candidates motivation and personal suitability. Interviews with the best qualified candidates will be arranged.

It is expected that the successful candidate will be able to complete the project in the course of the period of employment.

## Formal regulations

Please see the [guidelines and regulations](#) for appointments to Postdoctoral fellowships at the University of Oslo.

No one can be appointed for more than one Postdoctoral Fellow period at the University of Oslo.

According to the Norwegian Freedom and Information Act (Offentleglova) information about the applicant may be included in the public applicant list, also in cases where the applicant has requested non-disclosure.

The University of Oslo has an [agreement](#) for all employees, aiming to secure rights to research results etc.

The University of Oslo aims to achieve a balanced gender composition in the workforce and to recruit people with ethnic minority backgrounds.

### **Contact information**

Prof Ståle Petter Lyngstadaas, phone +47 91613424, e-mail: spl@odont.uio.no, webpage: www.biomaterials.no

**The University of Oslo** is Norway's oldest and highest ranked educational and research institution, with 28 000 students and 7000 employees. With its broad range of academic disciplines and internationally recognised research communities, UiO is an important contributor to society.

**The Faculty of Dentistry** is one of the leading odontological research and educational institutions in Europe. The faculty's research groups contribute top research within several odontological fields.

In addition to educating dentists and dental hygienists, the Faculty has Ph.D program and professional-oriented specialist education. The Faculty holds significant competence in the various research and clinical disciplines, with good interdisciplinary collaboration. It is a modern faculty with approximately 450 students and approximately 450 employees. The faculty is also Norway's largest dental clinic with approximately 55,000 patient visits a year. The Faculty of Dentistry has two departments: Institute of Clinical Dentistry and Department of Oral Biology.

Jobbnorge ID: 170441, Deadline: 02.07.2019, Customer reference: 2019/5804

Prosjektittitel: BioNaNor  
NFR-program: nano2021

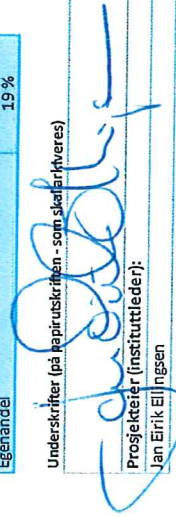
Årsverk	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Totalt</b>	<b>4,50</b>	<b>1,00</b>	<b>2,00</b>	<b>1,50</b>	-	-	-	-	-	-
Prosjektansatte	-	-	-	-	-	-	-	-	-	-
Eksternt fin. frikjøp	-	-	-	-	-	-	-	-	-	-
Internt fin. frikjøp	0,46	0,10	0,15	0,15	0,06	-	-	-	-	-
Tiløp	-	-	-	-	-	-	-	-	-	-
<b>Totale årsverk</b>	<b>4,96</b>	<b>1,10</b>	<b>2,15</b>	<b>1,65</b>	<b>0,06</b>	-	-	-	-	-
<b>Økonomi</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
<b>Eksterne inntekter og kostnader</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Eksterne inntekter	-8 029 000	-2 023 000	-3 211 000	-2 795 000	-	-	-	-	-	-
Viderefordelte inntekter	-	-	-	-	-	-	-	-	-	-
<b>Totale eksterne inntekter</b>	<b>-8 029 000</b>	<b>-2 023 000</b>	<b>-3 211 000</b>	<b>-2 795 000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Personalkostnader	3 393 682	732 816	1 503 739	1 157 127	-	-	-	-	-	-
Eksternt fin. frikjøp	-	-	-	-	-	-	-	-	-	-
Eksternt fin. overheadkostnader	848 420	183 204	375 935	289 282	-	-	-	-	-	-
Eksternt fin. leiestedskostnader	1 08 000	18 000	36 000	36 000	18 000	-	-	-	-	-
Direkte driftskostnader	3 214 000	910 000	925 000	1 025 000	354 000	-	-	-	-	-
<b>Totale eksterne kostnader</b>	<b>7 564 102</b>	<b>1 844 020</b>	<b>2 840 673</b>	<b>2 507 409</b>	<b>372 000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Resultat på prosjektet</b>	<b>-464 898</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>372 000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Intern finansiering av ressurser</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Egenandel	-1 805 263	-384 047	-708 559	-609 019	-1 03 638	-	-	-	-	-
Internt fin. frikjøp	579 239	119 197	185 982	190 817	77 243	-	-	-	-	-
Internt fin. overheadkostnader	1 232 025	264 850	522 577	418 202	26 396	-	-	-	-	-
Internt fin. leiestedskostnader	-	-	-	-	-	-	-	-	-	-
Egenfinansiert drift	-	-	-	-	-	-	-	-	-	-
<b>Totalramme i prosjektet</b>	<b>9 369 365</b>	<b>2 228 067</b>	<b>3 549 232</b>	<b>3 116 428</b>	<b>475 638</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Analyse av nettobidrag</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Egenfinansiert drift	-	-	-	-	-	-	-	-	-	-
Eksternt fin. frikjøp	-	-	-	-	-	-	-	-	-	-
Eksternt fin. overheadkostnader	848 420	183 204	375 935	289 282	-	-	-	-	-	-
Eksternt fin. leiestedskostnader	108 000	18 000	36 000	36 000	18 000	-	-	-	-	-
<b>Nettobidrag</b>	<b>956 420</b>	<b>201 204</b>	<b>411 935</b>	<b>325 282</b>	<b>18 000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

Kort begrunnelse for prosjektets faglige interesse: dette prosjektet bruker framtidens materialer for mjuk vev regenerasjon som vil vere svært nyttig for oral mucosal tilheling

Kort begrunnelse for kategorisering (bidrag/oppdrag):

Nettobidrag	28 %
Overhead (indirekte kostnader)	52 %
Eksternt finansiert overhead	25 %
Egenandel	19 %

Underskrifter (på papiruskriften - som skal arkiveres)

  
Prosjektleder (instituttleder):  
Jan Eirik Ellingsen

Prosjektleder:  
Ståle Petter Lyngstadas

Dato: 24/5-19

Dato: 27.05.2019

Postboks 1072 Blindern  
0316 OSLO  
Norway

**att:** Instituttleder Jan Eirik Ellingsen

Oslo, 19.12.2018

**Enquiries to:**

Cecilie Anita Mathiesen  
+4722037543  
cam@forskningsradet.no

**Application received:** 24.04.2018

**Our ref.:** 287991/O70

## Contract dispatched

**Project Title:** A bioactivated nano-layered hydrogel for dermal regeneration in hard-to-heal ulcers

**Project No.:** 287991

**Project Manager:** Ståle Petter Lyngstadaas

**Project Administrator:** Jan Eirik Ellingsen

With reference to the application for funding for the above-mentioned project, the programme/activity Nanoteknologi og avanserte materialer at the Research Council of Norway has at its meeting of 22.10.2018 granted an allocation to the project for 2019. Pledges for subsequent years, if any, as well as the terms that apply to the allocation, are specified in the attached contract.

The project has been assigned the following project number 287991. Please use this number on all enquiries to the Research Council relating to the project.

**Contacts at the Research Council:**

Turid Grøtli Aalholm, tga@forskningsradet.no for all reporting and  
Cecilie Anita Mathiesen, cam@forskningsradet.no for subject-specific questions.

The contract is comprised of the following documents:

- R&D Project Agreement Document,
- Project description,
- General Terms and Conditions for R&D Projects.
- Any other documents specified in the agreement document.

Please read through the attached contract documents carefully and sign or reject them electronically via “My RCN Web” as soon as possible and at the latest **within three months**. If you choose to reject the contract documents, please provide your reasons.

Please check to ensure that all the data are correct and contact the Research Council immediately if you discover any errors or missing information.



Collaboration agreements with partners must be marked with the assigned project number and uploaded on "My RCN Web". This must be done before the contract may be signed.

The contract will not formally enter into force and disbursement of funding will not take place until the Research Council has received and approved the signed contract and copies of the collaboration agreements with partners.

The Research Council reserves the right to withdraw the dispatched contract or amend the provisions of the contract if it has not received the signed contract documents within the deadline.

In addition to the reporting obligations that are set out in the General Terms and Conditions for R&D Projects, the Project Owner is required to keep the Research Council apprised of the following:

- the Project Owner's enterprise number (now: 971035854);
- organisational changes carried out at the Project Owner;
- the Project Owner's current mailing address, telephone number, and email address;
- the party to whom the specifications regarding potential automatic disbursement of funds are to be sent: name and email address;
- the bank account number to be used for the Research Council's disbursements.

If the Project Owner has already supplied the above information in connection with other projects, it is not necessary to repeat them in connection with this project. The project administrator should send any new or updated information to the Research Council at [okonomi@forskningsradet.no](mailto:okonomi@forskningsradet.no).

If disbursements to the project do not take place as agreed, please notify the Research Council's contact person for the project (see above). The Project Owner is not permitted to send reminder letters to or claim interest from the Research Council of Norway.

All changes to and deviations in the project framework must be reported to the Research Council as soon as possible via "My RCN Web > Projects/Reports > View / Change project"

This letter has been sent in electronic form to Instituttleder Jan Eirik Ellingsen, who has been authorised by the Project Owner to sign the contract with the Research Council on "My RCN Web".

If the Project Owner has chosen to centralise the responsibility for signing all R&D contracts with the Research Council to a single contract administrator within the organisation, then Jan Eirik Ellingsen as project administrator and Ståle Petter Lyngstadaas as project manager have been included as secondary recipients with read access to the available contract documents on "My RCN Web".

The Project Owner is responsible for informing the other parties involved in the project about the contract with the Research Council.

The project administrator is responsible for ensuring that all project documents of archival value are stored internally within the organisation. All contract documents may be downloaded from "My RCN Web".

More information about Research Council's general terms and conditions for R&D projects may be found on the Research Council's website at: [www.forskningsradet.no](http://www.forskningsradet.no).

Sincerely yours,

**The Research Council of Norway**

Director  
Division for Industries and Technologies

*Project no.: 287991*

Cecilie Anita Mathiesen  
Seniorrådgiver  
Division for Industries and Technologies

**Approved and expedited electronically**

**Attachments**

# R&D Project Agreement Document

## Article 1: Contracting parties

Between

**The Research Council of Norway**

Enterprise number: 970141669

(hereafter also referred to as the **Research Council**)

and

**UNIVERSITETET I OSLO**

Enterprise number: 971035854

(hereafter referred to as the **Project Owner**)

a contract has been signed for the following project, described below (hereafter referred to as the **project**).

**The following partners will participate in the project:**

Organization no.	Partner Institution	From date	To date
	University of Manchester	01.03.2019	
	Universidade de Aveiro	01.03.2019	

The Project Owner is under obligation to draw up collaboration agreements with the partners pursuant to Section 2.2 of the General Terms and Conditions for R&D Projects.

## Article 2: The project

**2.1 Project title:** A bioactivated nano-layered hydrogel for dermal regeneration in hard-to-heal ulcers

**2.2 Project no.:** 287991

Please specify the project number in connection with all enquiries directed to the Research Council, including on payment documents.

### 2.3 Objective of the project

The BioNaNOR uses a novel strategy aiming at overcoming major hurdles in current hard-to-heal ulcer treatment. At the present, there are no known solutions for bioengineered dermis that completely mimics the anatomy, physiology, biology and physical properties of the natural tissue. The primary objective of the BioNaNOR proposal is to replace natural grafts in advanced ulcer treatment by providing a synthetic material that promotes regeneration of the dermal tissue that is subsequently covered by epithelium in the natural way.

The secondary objectives are (i) to define and optimize the concentration of synthetic bioactive peptides in the BioNanOr hydrogel, (ii) outline and optimize the nano-layered hydrogel for cellular invasion and loading bioactive molecules, (iii) study the membrane fluid permeability, tissue adhesion, degradation and biocompatibility, and (iv) to ensure responsible use of nanotechnology in health applications

### 2.4 Project description and project summary

**The project description** for project no. 287991 is provided in the document dated 19.12.2018.

*Project no.:* 287991

**Changes in the project description** must be approved by the Research Council. Requests for changes must be submitted to the Research Council via “My RCN Web” > “Projects/Reports” > “View / Change project”.

**The following project summary may be published by the Research Council:**

Several strategies have been developed to restore dermal function. These include collagen membranes, decellularized dermis from donors or synthetic graft alternatives. So far, these approaches have been unreliable at best and auto-grafts and transplants (that both create their own problems with donor site morbidity, risk for disease transfer and infections and graft rejection) remain the only predictable method for treating hard-to-heal ulcers today. The major reasons for the failures of these approaches are most probably lack of physical strength combined with poor integration with the subjacent tissues and lack of biological signals that can home in precursor cells (e.g. stem cells and fibroblasts) from surrounding healthy tissues, and finally, the lack of biological signals for epidermis formation. The BioNaNOR project aims at using a dermis-matrix-mimicking hydrogel based on nano-layered and chemically modified chitosan. This artificial dermis analogue will be designed with one “deeper” part that provide biological signals for homing and differentiation of mesoderm derived stem cells, and one “superficial” part that includes molecules that stimulate epithelial cell growth and migration. The nano-layered chitosan matrix is bio-degradable and is ultimately replaced by natural dermal tissue that is later covered by epidermis. During this process, the material slowly releases the embedded bioactive molecules together with chitosan metabolites that are known to favour healing by reducing inflammation and suppressing bacterial growth. Moreover, as treatment for hard-to-heal “Full-thickness” ulcers also requires a material that immediately restores and maintain the barrier function and provide tissue strength, stability and elasticity during healing, the BioNaNOR approach include an ultra-strong, nano-layered material that interacts well with the underlying stratum and restore the tissue barrier until the healing tissues have restored their normal function.

### **Article 3: Contract documents and rules of interpretation**

The contract includes this signed agreement document and as a minimum the following documents:

- **The General Terms and Conditions for R&D Projects** (attached)
- **Project description** (see reference in Article 2.4)

This project will be carried out in collaboration with partners, and a copy of the signed collaboration agreement(s) must be attached to this agreement document.

In the event that the provisions of the various contract documents conflict with one another, they shall apply in the order of precedence listed above.

Amendments agreed between the parties in writing subsequent to the signing of the contract are also part of the contract and will take precedence over other contract documents.

### **Article 4: Project management – administrative and scientific**

#### **4.1 The Project Owner has appointed the following project management:**

**Project administrator**

Name: Jan Eirik Ellingsen

Title: Instituttleder

**Project manager**

Name: Ståle Petter Lyngstadaas

Title: Professor

*Project no.: 287991*

**Any change of project administrator** shall be immediately reported to the Research Council. Notification must be submitted to the Research Council via “My RCN Web” > “Projects/Reports” > “Change of role”.

**Changes of the project manager** must be approved by the Research Council. Requests for changes must be submitted to the Research Council via “My RCN Web” > “Projects/Reports” > “Change of role” and must include the CV of the desired project manager as well as the desired date of commencement of duties.

**Research performance site at the Project Owner:**

DET ODONTOLOGISKE FAKULTET, Organization number:

**4.2 The responsible division/unit of the Research Council is:** Division for Industries and Technologies

The allocation is granted under the following programme/activity: NANO2021

## Article 5: Project period and progress plan

**The project period is to be:**

From the starting date: 01.03.2019

To the date of completion: 28.02.2022

The Project Owner is under obligation to carry out the activities listed in the progress plan:

Main activity	From year	Quarter	To year	Quarter
Work package 1, Fiber reinforcement completed	2019	1	2020	3
Work package 2, nano-layered hydrogel	2019	1	2020	3
Work package 3, Biomolecules incorporated	2019	3	2021	1
Work package 4, Active gel tested in cells	2020	1	2021	2
Work package 5, Animal test completed	2021	1	2021	3
Work package 6, Dissemination and IPR	2019	1	2022	1

## Article 6: Project budgets and funding

### 6.1 Cost plan

#### 6.1.1 Distribution of project costs by cost category (amounts in NOK 1 000)

The project is to be implemented in accordance with the following cost plan:

	Amount	2019	2020	2021	2022
Payroll and indirect expenses	6 247	1 500	2 588	2 055	104
Procurement of R&D services	200	100	100	0	0
Equipment	108	18	36	36	18
Other operating expenses	2 914	810	925	825	354
<b>Total amount</b>	<b>9 469</b>	<b>2 428</b>	<b>3 649</b>	<b>2 916</b>	<b>476</b>

Changes in the cost plan must be approved by the Research Council. Requests for changes must be submitted to the Research Council via “My RCN Web” > “Projects/Reports” > “View / Change project”.

### 6.1.2 Distribution of project costs by cost code (in NOK 1 000)

Project costs are to be distributed by cost code as follows:

	<b>Sum</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Trade and industry	0	0	0	0	0
Research institutes	0	0	0	0	0
Universities and university colleges	9 469	2 428	3 649	2 916	476
Other sectors	0	0	0	0	0
Abroad	0	0	0	0	0
<b>Total amount</b>	<b>9 469</b>	<b>2 428</b>	<b>3 649</b>	<b>2 916</b>	<b>476</b>

Changes in the distribution between cost codes must be approved by the Research Council. Requests for changes must be submitted to the Research Council via My RCN Web > Projects/Reports > View/Change project.

### 6.1.3 Distribution of project costs per partner per main activity (in NOK 1 000)

The distribution of project costs per partner per main activity is to be as follows:

<b>Partner / Aktivitet</b>	<b>SUM</b>	<b>Sum</b>
Universidade de Aveiro	0	0
DET ODONTOLOGISKE FAKULTET	9 469	9 469
University of Manchester	0	0
<b>Totalsum</b>	<b>9 469</b>	<b>9 469</b>

Changes in the distribution of project costs between the various partners or main activities must be approved by the Research Council. Requests for changes must be submitted to the Research Council via “My RCN Web > Projects/Reports > “View / Change project”.

### 6.1.4 Distribution of project costs by partners defined as funding recipients (in NOK 1 000)

The distribution of project costs between partners defined as funding recipients is to be as follows:

<b>Partner / Activity</b>	<b>SUM</b>	<b>Amount</b>
DET ODONTOLOGISKE FAKULTET	9 469	9 469
<b>Total amount</b>	<b>9 469</b>	<b>9 469</b>

Changes in the distribution of the various project costs between partners must be approved by the Research Council. Requests for changes must be submitted to the Research Council via “My RCN Web > Projects/Reports > “View / Change project”.

## 6.2 Funding plan (amounts in NOK 1000)

The project is to be implemented in accordance with the following funding plan:

	<b>Amount</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
The Research Council	8 301	2 023	3 311	2 595	372
Own financing	1 168	405	338	321	104
Public funding	0	0	0	0	0
Private funding	0	0	0	0	0
International funding	0	0	0	0	0
<b>Total amount</b>	<b>9 469</b>	<b>2 428</b>	<b>3 649</b>	<b>2 916</b>	<b>476</b>

Changes in the funding plan must be approved in writing by the Research Council and is treated as a contractual amendment, ref. General Terms and Conditions for R&D Projects, item 14. Requests for changes must be submitted to the Research Council via My RCN Web > Projects/Reports > View > Change project.

Project no.: 287991

### 6.3 Specification of the Research Council's allocations for 2019 and pledges for upcoming years

	Amount	2019	2020	2021	2022
General lump sum – government agencies	8 301 000	2 023 000	3 311 000	2 595 000	372 000
<b>Total amount</b>	<b>8 301 000</b>	<b>2 023 000</b>	<b>3 311 000</b>	<b>2 595 000</b>	<b>372 000</b>

### 6.4 Disbursement

The Research Council's allocation for the first year and any pledges for subsequent years will be disbursed in accordance with the conditions set out in this agreement and the General Terms and Conditions for R&D Projects.

The Research Council will disburse funds automatically at four-month intervals, provided the project is in compliance with the progress and funding plans set out in the contract.

## Article 7: Reports

The following reports shall be submitted to the Research Council:

### 7.1 Progress reports

The Project Owner is to submit progress reports annually.

Deadline: **1 October**.

The progress report is to be submitted via "My RCN Web".

Otherwise, please see Section 5 of the General Terms and Conditions for R&D Projects.

### 7.2 Final report

Deadline: **1 month after the conclusion of the project period**.

The Project Owner is to submit the final report via "My RCN Web".

Otherwise, please see Section 5 of the General Terms and Conditions for R&D Projects.

### 7.3 Other reports

Reports and publications that are not compulsory that have been drawn up on the initiative of project management shall not be submitted to the Research Council, unless specifically agreed upon. The Project Owner is required to store all technical reports and publications for at least 10 years after conclusion of the project period. The Project Owner shall assign an ISBN/ISSN number to the reports and/or publications, where so required, and ensure that these are sent to the National Library in Mo i Rana.

## Article 8: Other special terms of contract and deviations from the General Terms and Conditions for R&D Projects

### Required submission of data management plans for projects that generate research data

Starting in 2018, all projects that have applied for and been granted research funding will, as a general rule, be required to submit a data management plan if the project collects or in some other way produces research data. The Project Owner is to use its own internal guidelines for data management to assess whether the project requires a data management plan.

Information about the archives and/or data infrastructure(s) where the data are to be stored is to be provided in the data management plan and in the final project report.

In the case of projects that generate research data but have not drawn up a data management plan, information regarding the archives and/or data infrastructure(s) where the data are to be stored must be provided in the final project report.

**Archiving of research-generated data**

The Project Owner is responsible for ensuring that research-generated data/result data generated in connection with projects, and all the necessary documentation for reuse of the data (metadata) are stored in secure archives. The data are to be transferred for storage at the earliest possible stage, and no later than three years after completion of the project.

**This contract has been approved and expedited electronically.**

**For the Research Council of Norway**

Oslo, 19.12.2018

Director

Division for Industries and Technologies

**For the Project Owner:**

Jan Eirik Ellingsen

Instituttleder

**Attachments:**

- **General Terms and Conditions for R&D Projects** (valid at date of received application: 24.04.2018)
- **Project description**
- **Copy of signed collaboration agreement(s)**