Application for PhD position

(ERC CoG project NEPHRON)

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| Please fill this application form with the requested information. Combine the requested documents (this form completed in Word format, your curriculum, copy of academic transcript and one recommendation letter or contact information of at least one reference), in a ZIP file (Surname-Name.zip) and upload it in the following link <https://surfdrive.surf.nl/files/index.php/s/0utbfkSVdPy0mAH> |

Personal information

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| **Photo**  (Passport style) |  |
| First name(s): | Click or tap here to enter text. |
| Last name: | Click or tap here to enter text. |
| Gender: | Click or tap here to enter text. |
| Date of Birth: | Click or tap here to enter text. |
| Nationality: | Click or tap here to enter text. |
| E-mail: | Click or tap here to enter text. |
| Country of residency: | Click or tap here to enter text. |
| Current address: | Click or tap here to enter text. |
| Mobile number: | Click or tap here to enter text. |
| **Availability date:** | Click or tap to enter a date. |
| **Time required to relocate to the Netherlands:** | Click or tap here to enter text. |
| **Visa required:** | NO  YES |
| **Visa process duration (expected):** | Click or tap here to enter text. |

Current position

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| **Current situation** | Employed  Unemployed |
| **Employer** | Click or tap here to enter text. |
| **Contract** | Permanent  Term contract |
| **End date of contract**  (if applicable) | Click or tap to enter a date. |

Education

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| **Master in …** | Click or tap here to enter text. |
| **Title of the thesis** | Click or tap here to enter text. |
| **Status** | Completed  Ongoing |
| **Date of completion** (or expected date) | Click or tap to enter a date. |
| **University** | Click or tap here to enter text. |
| **Supervisor(s) details** | Click or tap here to enter text. |

Motivation letter (take into consideration the project abstract, available below, by highlighting relevant skills and the research you would propose during your appointment)

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**Knowledge and Skills relevant for the position**

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| --- | --- |
| Bioprinting | Theoretical  Practical |
| (add relevant details here) | Click or tap here to enter text. |
| Cell culture | Theoretical  Practical |
| (add relevant details here) | Click or tap here to enter text. |
| Other assay(s)/techniques | Theoretical  Practical |
| (add relevant details here) | Click or tap here to enter text. |
| Organic chemistry | Theoretical  Practical |
| (add relevant details here) | Click or tap here to enter text. |
| Material synthesis characterization | Theoretical  Practical |
| (add relevant details here) | Click or tap here to enter text. |
| Material characterization | Theoretical  Practical |
| (add relevant details here) | Click or tap here to enter text. |

**Soft skills relevant for the position**

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| Click or tap here to enter text. |

**Supporting letter/ contact details of references**

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| **Supporting letter uploaded** | YES NO |
| **Contact details of references** | Click or tap here to enter text. |

**Any other information to support your application**

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| Click or tap here to enter text. |

**Video Pitch**

Candidates are encouraged to send a pitch video (up to 3 min) to support their application while highlighting relevant aspects requested for the position. Please name your video with “Surname-Name.avi”. Author should upload the video in the link provided below. To get you inspired you can see a bit of what we do in this video <https://www.youtube.com/watch?v=Bh_PsdAPpEU>

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| **Video Uploaded** | YES NO (opt out) |
| **Link to upload video** | <https://surfdrive.surf.nl/files/index.php/s/0utbfkSVdPy0mAH> |

**Abstract**

Chronic kidney disease (CKD) results in loss of kidney function in patients, ultimately requiring organ transplant. Critical organ shortage and organ rejection after transplant make extended dialysis inevitable and the only therapy available. To exacerbate this problem, the incidence of CKD is increasing worldwide, with >14% of the general population affected. Hence, there is an urgent need for novel therapies. Induced pluripotent stem cells have been used to create kidney organoids representing early renal development stages. These organoids might be a suitable therapy in the future but fundamental challenges to achieve late stages of physiologically relevant maturation and function need to be addressed. The lack of vasculature and collection duct systems limits the viability and filtrate removal. To overcome this challenge, I aim to develop a novel, mature in vitro kidney model by exploiting different bioprinting technologies combined with organoid knowledge. This solution will include a bioengineered kidney extracellular (ECM) microenvironment, a vascularized network and a collecting duct system.

I hypothesize that the strategic combinations of different bioprinting techniques will allow the development of key structures such as vasculature, essential for promoting maturation of the in vitro model, and a collecting duct for filtrate collection with an expected increase in function resembling the organ. Finally, the combination of the different modules on a microfluidic platform will allow the accurate control of the organoid perfusion and long-term cultures. NEPHRON will allow further knowledge on bioprinting functional kidney units while providing scientists an improved in vitro model to study development, disease and regeneration of the kidney. This knowledge can lead ultimately to alternative therapies and give initial indications on the future possibility of bioprinting a full functional organ.

**Data protection statement**

All of the information collected in this form is necessary and relevant to the performance of the job applied for. We will use the information provided by you on this form, by the referees you have noted, and the educational institutions with whom we may undertake to verify your qualifications with, for recruitment purposes only. The University of Maastricht will treat all personal information with the utmost confidentiality and in line with current data protection legislation. Should you be successful in your application, the information provided, and further information that will be gathered at the relevant time, will be subsequently used for the administration of your employment.