PhD Advert Template

Project title: Miniaturized fluidized bed bioreactor for bioprocessing

Project ID *(optional)*:

Accept all year-round applications

Funding information: Self-funded students only

Project description:

The technology of fluidized beds (FB) allows for the effective contact within multiple phases, thus having been widely applied in varieties of industrial process. Our group is the leader in micro-fluidized bed including their fundemantals but also application including carbon capture and some bioprocessing application. In his project our expertise would be used to design and study a 3 phase mini-fluidized bed bioreactor for the characterization of cell culture on the millimetre scale. The project would be in collaboration with the Agency for Science, Technology and Research (A\*STAR) of Singapore to utilize their excellent bioprocessing knowledge, skills and lab facilities.

3D printing, a promising fast design-fabrication technique, will be utilized in this project to manufacture small scale fluidized bed bioreactor that provides non-rectangular geometry and complex geometry for optimization of bioproduction. Afterwards, hydrodynamic investigation and optimization of the mini-FB reactor will be conducted to obtain a novel and stable fluidic system for cell growth and related metabolic activities.

Considering the potentials on applying 3D printing technique on fabrication of 3 phase miniaturized fluidized bed bioreactor, merits of biological and microbial research can be complemented. This research is aimed to design a novel 3D printed mini-FB bioreactor to characterize and optimize the cell cultivation from a small-scale respect.

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Application enquires: For more information, please contact

Dr Vladimir Zivkovic

 <https://www.ncl.ac.uk/engineering/staff/profile/vladimirzivkovic.html>

**We will also need to link your PhD advert up to the subject keywords below so that your PhD studentship can be found on findaphd.com. Please highlight up to three relevant keywords from the lists provided below.**

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PhD Disciplines & Subject areas

Agriculture

[ ]  agricultural sciences

[ ]  agricultural technology

[ ]  arable farming

[ ]  livestock farming

[ ]  forestry & arboriculture

[ ]  other

Anthropology

[ ]  biological anthropology

[ ]  social anthropology

[ ]  other

Architecture, Building & Planning

[ ]  architecture

[ ]  built environment

[ ]  construction management

[ ]  landscape architecture

[ ]  rural planning

[ ]  surveying

[ ]  urban planning

[ ]  other

Biological Sciences

[ ]  bacteriology

[ ]  behavioural biology

[ ]  biochemistry

[ ]  biodiversity

[ ]  bioinformatics

[ ]  biophysics

[x]  biotechnology

[ ]  cancer biology

[ ]  cell biology

[ ]  developmental biology

[ ]  ecology

[ ]  ecotoxicology

[ ]  entomology

[ ]  environmental biology

[ ]  evolution

[ ]  genetic engineering

[ ]  genetics

[ ]  genomics

[ ]  human genetics

[ ]  immunology

[ ]  marine biology

[ ]  microbiology

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[ ]  plant biology

[ ]  plant cell biology

[ ]  reproductive biology

[ ]  structural biology

[ ]  systematic biology

[ ]  virology

[ ]  zoology

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Business & Management

[ ]  accounting

[ ]  business

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[ ]  education management

[ ]  event management

[ ]  hospitality

[ ]  human resource management

[ ]  management

[ ]  marketing

[ ]  project management

[ ]  sport management

[ ]  tourism

[ ]  other

Chemistry

[ ]  analytical chemistry

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[ ]  computational chemistry

[ ]  environmental chemistry

[ ]  industrial chemistry

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[ ]  pharmaceutical chemistry

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[ ]  synthetic chemistry

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Communication & Media Studies

[ ]  broadcast media

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[ ]  journalism

[ ]  print media

[ ]  production

[ ]  public relations

[ ]  publishing

[ ]  other

Computer Science

[ ]  artificial intelligence

[ ]  computer architectures

[ ]  computer vision

[ ]  computer graphics

[ ]  cyber security

[ ]  data science

[ ]  human computer interaction

[ ]  internet of things

[ ]  machine learning

[ ]  networks

[ ]  quantum computing

[ ]  software engineering

[ ]  videogames

[ ]  other

Creative Arts & Design

[ ]  animation

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[ ]  crafts

[ ]  creative writing

[ ]  dance

[ ]  design

[ ]  drama

[ ]  fashion

[ ]  film studies

[ ]  fine art

[ ]  graphic design

[ ]  interior design

[ ]  music

[ ]  music technology

[ ]  photography

[ ]  theatre studies

[ ]  other

Economics

[ ]  econometrics

[ ]  financial economics

[ ]  macroeconomics

[ ]  microeconomics

[ ]  political economics

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Education

[ ]  further education

[ ]  higher education

[ ]  nursery education

[ ]  primary education

[ ]  secondary education

[ ]  special needs education

[ ]  other

Engineering

[ ]  acoustics engineering

[ ]  aerospace engineering

[ ]  atomic engineering

[ ]  automotive engineering

[ ]  bioengineering

[ ]  biomedical engineering

[x]  chemical engineering

[ ]  civil engineering

[ ]  communications engineering

[ ]  control systems

[ ]  cybernetics

[ ]  dynamics

[ ]  electrical engineering

[ ]  electronic engineering

[ ]  energy technologies

[ ]  environmental engineering

[x]  fluid mechanics

[ ]  gas engineering

[ ]  geotechnical engineering

[ ]  integrated engineering

[ ]  manufacturing engineering

[ ]  marine engineering

[ ]  mechanical engineering

[ ]  mechanics

[ ]  mechatronics

[ ]  nanotechnology

[ ]  offshore engineering

[ ]  petroleum engineering

[ ]  robotics

[ ]  solid mechanics

[ ]  structural engineering

[ ]  structural mechanics

[ ]  systems engineering

[ ]  thermodynamics

[ ]  other

Environmental Sciences

[ ]  climate science

[ ]  hydrology

[ ]  marine sciences

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[ ]  pollution

[ ]  soil science

[ ]  other

Finance

[ ]  actuarial science

[ ]  banking

[ ]  financial management

[ ]  insurance

[ ]  investment

[ ]  taxation

[ ]  other

Food Sciences

[ ]  food hygiene

[ ]  food production

[ ]  other

Forensic and Archaeological Sciences

[ ]  archaeological science

[ ]  forensic science

[ ]  other

Geography

[ ]  agricultural geography

[ ]  cultural geography

[ ]  economic geography

[ ]  environmental geography

[ ]  geographical information systems gis

[ ]  historical geography

[ ]  human geography

[ ]  marine geography

[ ]  physical geography

[ ]  political geography

[ ]  remote sensing

[ ]  social geography

[ ]  transport geography

[ ]  urban geography

[ ]  other

Geology

[ ]  applied geology

[ ]  geochemistry

[ ]  geophysics

[ ]  geoscience

[ ]  geotechnology

[ ]  hydrogeology

[ ]  marine geology

[ ]  palaeontology

[ ]  seismology

[ ]  volcanology

[ ]  other

History & Archaeology

[ ]  african history

[ ]  american history

[ ]  ancient history

[ ]  archaeology

[ ]  asian history

[ ]  australasian history

[ ]  british and irish history

[ ]  economic history

[ ]  european history

[ ]  heritage studies

[ ]  history

[ ]  history of art

[ ]  history of religions

[ ]  history of science

[ ]  medieval history

[ ]  military history

[ ]  modern history

[ ]  russian history

[ ]  social history

[ ]  world history

[ ]  other

Information Services

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Languages, Literature & Culture

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[ ]  asian studies

[ ]  australasian studies

[ ]  chinese

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[ ]  dutch

[ ]  english language

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Linguistics & Classics

[ ]  ancient greek

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[ ]  latin

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Materials Science

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[ ]  polymers

[ ]  textiles

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Mathematics

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[ ]  applied statistics

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[ ]  engineering mathematics

[ ]  mathematical modelling

[ ]  medical statistics

[ ]  operational research

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[ ]  pure mathematics

[ ]  statistics

[ ]  stochastic processes

[ ]  other

Medicine

[ ]  anatomy

[ ]  audiology

[ ]  biomechanics

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[ ]  complementary medicine

[ ]  dentistry

[ ]  endocrinology

[ ]  epidemiology

[ ]  neural engineering

[ ]  neurology

[ ]  nutrition

[ ]  ophthalmology

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[ ]  pathology

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[ ]  physiology

[ ]  physiotherapy

[ ]  podiatry

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[ ]  speech science

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[ ]  toxicology

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Nursing & Health

[ ]  adult nursing

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[ ]  environmental health

[ ]  health informatics

[ ]  medical nursing

[ ]  mental health nursing

[ ]  midwifery

[ ]  occupational health

[ ]  occupational therapy

[ ]  paediatric nursing

[ ]  paramedical science

[ ]  surgical nursing

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Philosophy

[ ]  ethics

[ ]  metaphysics

[ ]  philosophy of science

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Physics

[ ]  acoustics

[ ]  astronomy

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[ ]  medical physics

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[ ]  optical physics

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Politics & Government

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Psychology

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Sport & Exercise Science

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Theology & Religious Studies

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[ ]  theology

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Veterinary Sciences

[ ]  animal welfare

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[ ]  veterinary nursing

[ ]  veterinary nutrition

[ ]  veterinary pathology

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