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SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY (SCTIMST)

THIRUVANANTHAPURAM – 695 011, KERALA, INDIA

(An Institute of National Importance under DST ; Government of India)

(भारतसरकारकेअधीनएकराष्ट्रीयमहत्वकासंस्थान)

www.sctimst.ac.in

Press Release (19.2.2023)

Biomedical Products from Slaughterhouse Waste: National Recognition for Sree Chitra Veterinarian

Prof. TV Anilkumar (Head of the Division of Experimental Pathology at Sree Chitra Tirunal Institute for Medical Sciences and Technology https://www.sctimst.ac.in/People/tvanilkumar) who was elected as a Fellow of the National Academy of Agricultural Sciences (http://naas.org.in/detail.php?id=813, one of the Government-funded national academies of sciences) considering his contributions in making gall bladder of pigs (which is otherwise a slaughterhouse waste) in to a highly value added raw material for fabricating biomedical devices. He has several national and international patents on this innovation and transferred a technology (in 2017) to M/s Alicorn Medical Pvt Ltd (https://www.alicornmed.com, a startup biopharmaceutical firm in the Technology incubation facility of Sree Chitra Tiruanal Institute for Medical Sciences and Technology) for commercial production of wound healing matrices (that promotes faster healing of wounds in humans). The Academy also considered his accomplishments in Toxicologic Pathology (first veterinary doctor in India to become a Fellow of the internationally reputed Royal College of Pathologists, London) and expertise in Laboratory Animal Science (Visiting Professor, Indian Institute of Science Education and Research-Thiruvananthapuram https://www.iisertvm.ac.in/faculty/tvanilkumar and President of the Laboratory Animal Veterinarians Association)

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Background

The Fellowship of the NAAS is a highly prestigious honour among academicians and researchers in the broad subject of agricultural sciences, that includes veterinary/animal sciences. At present there are only five Fellows from Kerala in this academy representing agriculture/fisheries/forestry and Prof. Anilkumar is the first veterinary doctor in the group. He is an internationally acclaimed scientist with over 75 research publications and several national and international patents (one, US patent; one Irish patent; five Indian patents and ten Australian Innovation Patents). The current fellowship is based on his expertise in Laboratory Animal Science, Toxicologic Pathology and the research contributions on biomedical uses of cholecyst (gall bladder) of farm animals (http://naas.org.in/page.php?pageid=50). Otherwise a slaughter house waste without any monitory value, his research made gall bladder of pig into a highly value added raw material for biopharmaceutical products. He fabricated several potential advanced wound healing products, which are classified as Class-D Medical Devices

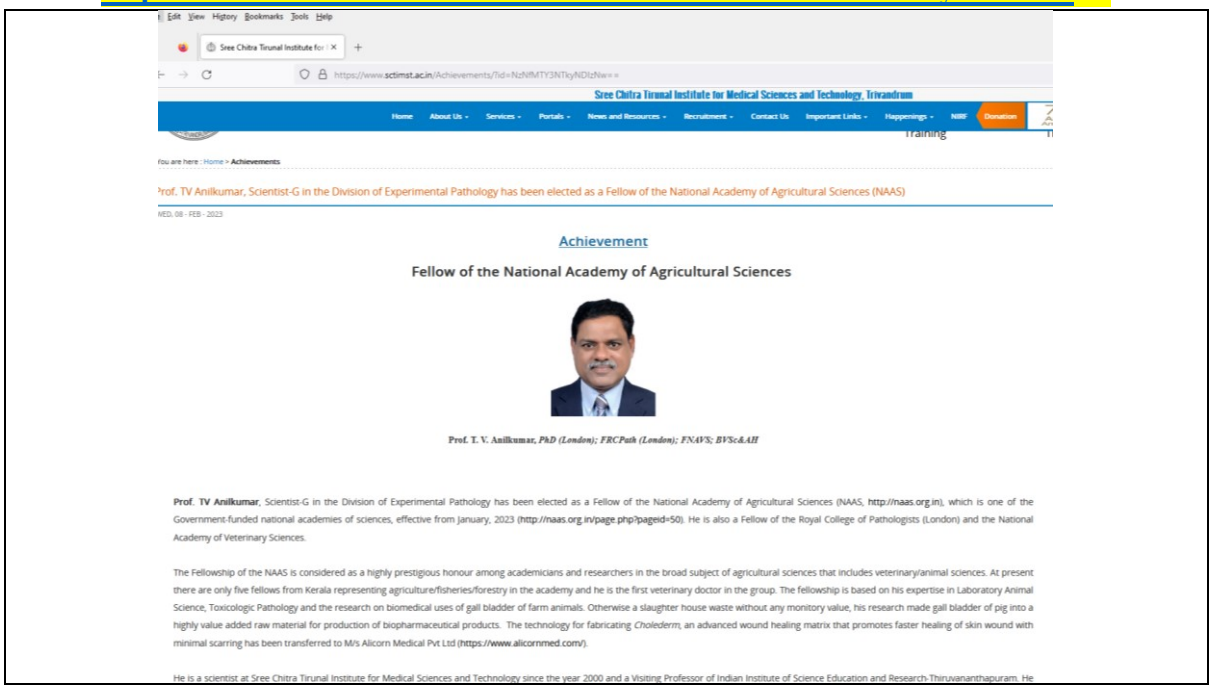
by the Central Drugs Standard Control Organization (https://cdsco.gov.in/). The technology for fabricating *Cholederm*, an advanced wound healing matrix capable of promoting faster healing of skin wound with minimal scarring was transferred to M/s Alicorn Medical Pvt Ltd (https://www.alicornmed.com/) in 2017. The firm is now purchasing gall bladder of pigs (size about 40g Gram) from M/s Meat Products of India (www.meatproductsofindia.com) at a cost of Rs 50/-, meaning that the cost of one Kilogram of gall bladder is Rs 1250/-. Considering that the market prize of pork is only Rs 500-700/- per Kilogram, for livestock farmers, this makes porcine (pig) gall bladder a highly value added slaughterhouse by product.

In fact, in the cutting edge technology of tissue engineering approach in treating human and animal diseases, the use of animal organ/tissues components for fabricating tissue-engineering-scaffolds (or scaffolds) is not new. Many researchers all over the world have used extracellular matrix of small intestine, urinary bladder and many other organs for fabricating tissue grafts. Some of these products are available in the international biopharmaceutical market. Prof. Anilkumar conceived the idea of using extracellular matrix of porcine gall bladder for fabricating biomedical products while working with Prof Abhay Pandit, at the National University of Ireland in 2004. After returning to SCTIMST from Ireland, he built a research team for conducting research on the biomedical uses of porcine cholecyst-derived scaffolds. The team pioneered a technology for recovering thin lyophilized sheets were made for treating skin wounds skin wound healing grafts. Last month a patent was awarded for this invention. Indeed, his students have won several laurels in several national and international forums and he holds Fellowships of the Royal College of Pathologists (London), Royal Society of Biology (England), International Academy of Toxicologic Pathologists (USA), National Academy of Veterinary Sciences (India) and Indian Association of Veterinary Pathologists.

Professor Anilkumar belongs to the 1978 batch of Mannuthy Veterinary College. He completed MSc in Toxicology and PhD in Animal Pathology of the University of London from the Imperial College of Science Technology and Medicine, Post-Doctoral Certificate in Laboratory Animal Medicine from the University of Guelph (Canada). After working briefly in Kerala Agricultural University, he joined SCTIMST in the year 2000 as Scientist-C (Veterinary Pathology).

Supporting documents

https://www.sctimst.ac.in/Achievements/?id=NzNfMTY3NTkyNDIzNw==



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Prof. TV Anilkumar, Scientist-G in the Division of Experimental Pathology has been elected as a Fellow of the National Academy of Agricultural Sciences (NAAS)

WED, 08 - FEB - 2023

Achievement

Fellow of the National Academy of Agricultural Sciences

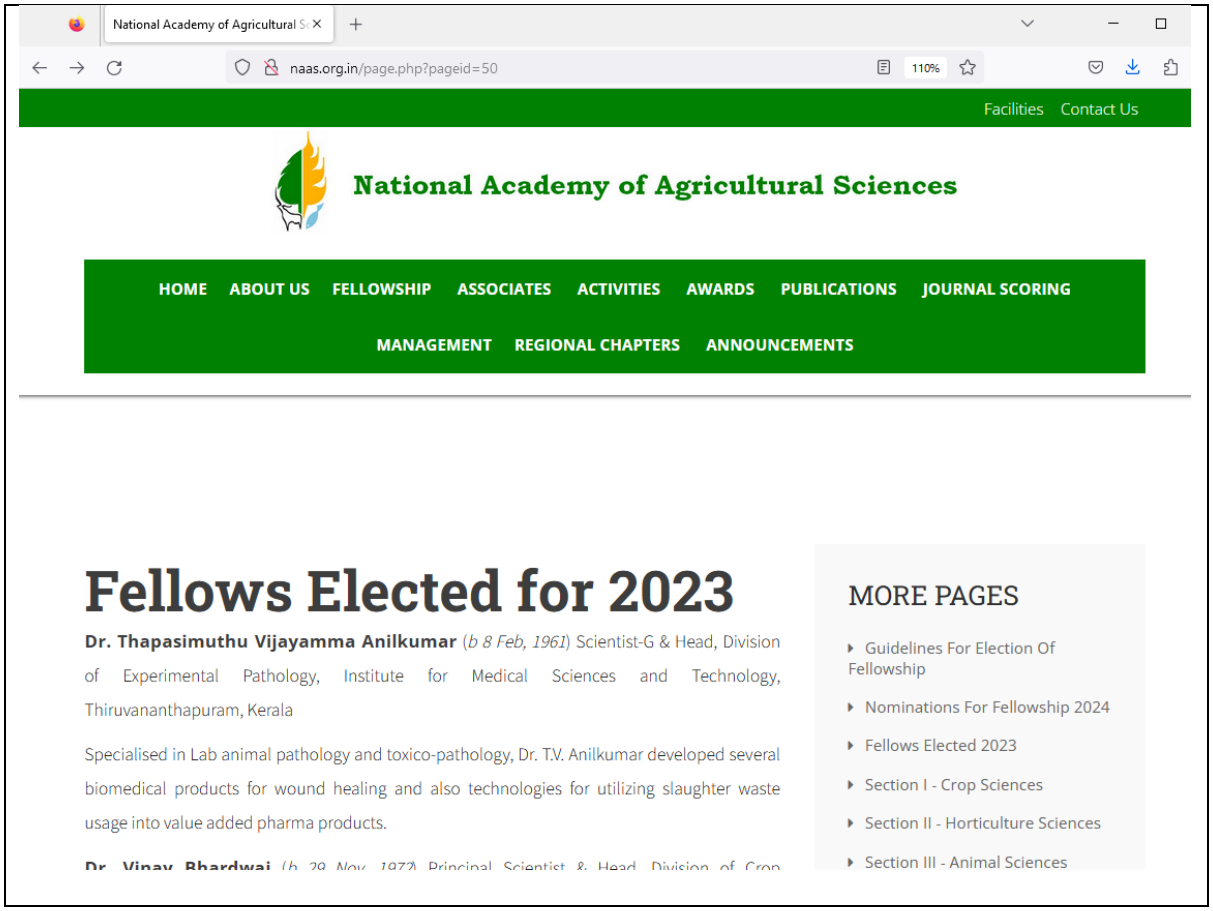
Prof. T. V. Anilkumar, PhD (London); FRCPath (London); FNAVS; BVSc&AH

Prof. TV Anilkumar, Scientist-G in the Division of Experimental Pathology has been elected as a Fellow of the National Academy of Agricultural Sciences (NAAS, http://naas.org.in), which is one of the Government-funded national academies of sciences, effective from January, 2023 (http://naas.org.in/page.php?pageid=50). He is also a Fellow of the Royal College of Pathologists (London) and the National Academy of Veterinary Sciences.

The Fellowship of the NAAS is considered as a highly prestigious honour among academicians and researchers in the broad subject of agricultural sciences that includes veterinary/animal sciences. At present there are only five fellows from Kerala representing agriculture/fisheries/forestry in the academy and he is the first veterinary doctor in the group. The fellowship is based on his expertise in Laboratory Animal Science, Toxicologic Pathology and the research on biomedical uses of gall bladder of farm animals. Otherwise a slaughter house waste without any monitory value, his research made gall bladder of pig into a highly value added raw material for production of biopharmaceutical products. The technology for fabricating *Cholederm*, an advanced wound healing matrix that promotes faster healing of skin wound with minimal scarring has been transferred to M/s Alicorn Medical Pvt Ltd (https://www.alicornmed.com/).

He is a scientist at Sree Chitra Tirunal Institute for Medical Sciences and Technology since the year 2000 and a Visiting Professor of Indian Institute of Science Education and Research-Thiruvananthapuram. He

http://naas.org.in/page.php?pageid=50



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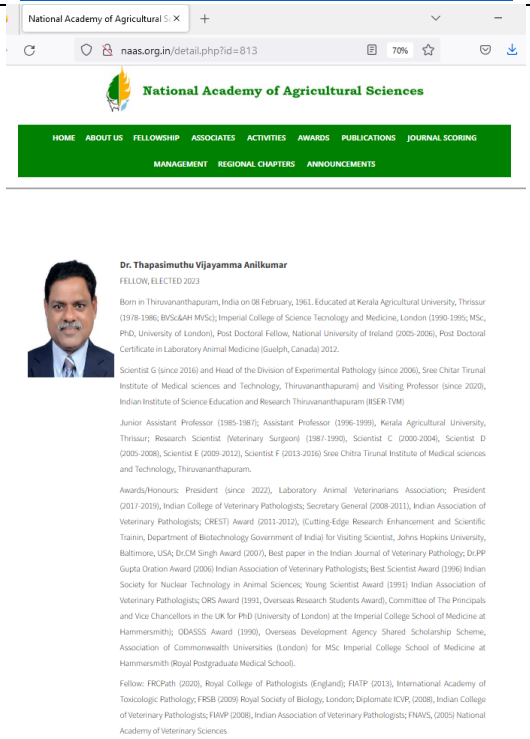

അറവുമാലിന്യത്തിൽ നിന്നും ബയോമെഡിക്കൽ ഉല്പന്നം: ശ്രീചിത്രയിലെ വെറ്റിനറി ശാസ്ത്രജ്ഞന് അഖിലേന്ത്യ അംഗീകാരം:

നാഷണൽ അക്കാഡമി ഓഫ് അഗ്രികൾച്ചറൽ സയൻസസ് (http://naas.org.in) വിശിഷ്ട അംഗത്വം നൽകിയ പ്രൊഫസർ റ്റി. വി. അനിൽകുമാർ. കാർഷിക മേഖലയിലെ വിദഗ്ദ്ധരുടെ ഈ കൂട്ടായ്മയിലേക്ക് കേരളത്തിൽനിന്നും തിരഞ്ഞെടുക്കപ്പെട്ട ആദ്യത്തെ വെറ്റിനറി ഡോക്ടർ. ശ്രീചിത്രാ ഇൻസ്റ്റിട്യൂട്ടിലെ എക്സ്പെരിമെന്റൽ പത്തോളജി വിഭാഗം മേധാവി (https://www.sctimst.ac.in/people/tvanilkumar). അറവുശാലകളിൽ കശാപ്പു ചെയ്യുന്ന പന്നികളുടെ പിത്താശയത്തിൽ നിന്നും, വേഗത്തിൽ മുറിവുണങ്ങാൻ സഹായിക്കുന്ന ബയോമെഡിക്കൽ ഉൽപന്നങ്ങൾ ഉണ്ടാക്കുവാനുള്ള സാങ്കേതിക വിദ്യ വികസിപ്പിച്ചെടുത്തതിനാണ് ഈ ബഹുമതി. അദ്ദേഹം ഈ മേഖലയിൽ നിരവധി ദേശീയ അന്തർദേശീയ പേറ്റൻഡുകൾ നേടുകയും സാങ്കേതിക വിദ്യ ചിത്രയിലെ തന്നെ സ്റ്റാർട്ട്അപ്പ് കമ്പനിയായ അലിക്കോൺ മെഡിക്കലിനു (https://www.alicornmed.com) കൈമാറ്റം നടത്തുകയും ചെയ്തിട്ടുണ്ട്. ഈ അംഗത്വത്തിനു വേണ്ടി അക്കാഡമി അദ്ദേഹത്തിന്റെ പരീക്ഷണ മൃഗങ്ങളിലുള്ള വൈദഗ്ദ്യവും ടോക്സികോളജിക് പത്തോളജിയിലുള്ള മികവും പരിഗണിക്കുകയുണ്ടായി. ഇൻഡ്യയിൽ നിന്നും ആദ്യമായി ലണ്ടനിലെ റോയൽ കോളേജ് ഓഫ് പത്തോളജിയിൽ വിശിഷ്ട അംഗത്വം നേടിയ ആദ്യത്തെ വെറ്റിനറി ഡോക്ടർ കൂടിയാണ് അദ്ദേഹം. വിതുരയിലെ IISER-ൽ വിസിറ്റിംഗ് പ്രൊഫസറായും അദ്ദേഹം പ്രവർത്തിക്കുന്നുണ്ട്. (https:iisertvmac.in/faculty/tvanikumar)

Note: National Academy of Agricultural Sciences is one of the major five national science academies in India funded by Government of India.

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