

Vellaisamy A. L. Roy

華禮生

Summary

Roy Vellaisamy is a Chair Professor of Intelligent Systems and leader of Molecular Electronics (MOLEC) group at the Hong Kong Metropolitan University (**HKMU**). Prior to HKMU, he was a Professor of Intelligent Systems at the University of Glasgow (**UK**) where he is currently a Professor affiliate. In Hong Kong, he held faculty positions at City University of Hong Kong for 11 years (2008 to 2019; Assistant & Associate Professor) and The University of Hong Kong (2004 to 2008; Research Assistant Professor). He holds adjunct positions at UESTC, Chengdu & SZAR (ShenZhen Academy of Robotics), China. In 2019, he received **gold** medals for his “*Sensor Platform*” at the 47th International Exhibition of Inventions (Geneva); *iCAN 2022* (Toronto, Canada); He was also a recipient of TRIL-Research Fellow awarded by The International Centre for Theoretical Physics (ICTP, UNESCO institution), Trieste (Italy), Excellent Product Award (2011, 12, 13 & 18) at China Hi-Tech Fair awarded by the PRC's Ministry of Commerce and secured “1000 talent plan” of Zhejiang province (2017). Together with his graduate students, Roy as a founding member, established **3 spin-off** companies in HK and UK for the development of point of care diagnostic tools. Roy works closely with industries in UK and Greater Bay Region for the development of intelligent sensors and quantum technologies.

RESEARCH INTERESTS & OUTPUT

- **NET-ZERO** (Hydrogen production, Waste heat recovery, Sustainable materials, and environmental remediation)
- **Healthcare Technologies** (point of care diagnostics tools)
- **Quantum technologies** (THz based Quantum materials and devices)
- **Neuromorphic** synaptic devices for next generation computation

Patents: 21 (granted)

Journal articles > 200

<https://scholar.google.com.hk/citations?user=Yh8GEfEAAA&hl=en>

Experience

Professor of Intelligent Systems, Nov' 2019 – Feb' 2023 & Director, Glasgow – UESTC (Chengdu), dual PhD program (2022-2023) – University of Glasgow, United Kingdom
Associate Professor, July 2012 – Nov'2019 (no pay leave between Nov' 2019 – Aug' 2022)
Assistant Professor, Dec' 2008 – June 2012;
Department of Materials Science and Engineering, City University of Hong Kong
Honorary Assistant Professor, Dec'2008 – Dec'2010;
Research Assistant Professor, Mar' 2005 – Dec' 2008;
Research Associate, July 2004 – Feb'2005;
Department of Chemistry, The University of Hong Kong
TRIL Fellow, June 2003 – July 2004 (ISMN, Council for National Research, Bologna, Italy
Research Assistant, Nov'2002 – June 2003 (Department of Electrical and Electronic Engineering, The University of Hong Kong)
PhD in Materials Engineering (2004), Department of Physics, Nagpur University, India
Adjunct Professor – **UESTC**, Chengdu; **SZAR** (ShenZhen Academy of Robotics) - China
Researcher unique identifier(s) (such as ORCID): <https://orcid.org/0000-0003-1432-9950>

RESEARCH FUNDS – As a PI/Co-PI led projects worth of **US\$ 12 millions** funded by RGC & ITC of HKSAR, Industries in UK & HK and State Oceanic Administration

FELLOWSHIPS AND AWARDS

- **TRIL-Research Fellow** (2003-04) awarded by The International Centre for Theoretical Physics (ICTP), Trieste, Italy.
- Excellent Product Award (2011, 12, 13 & 18) at China Hi-Tech Fair, The PRC's Ministry of Commerce
- 1000 Talent award (Zhejiang), China (2017)
- Excellent supervisor award (2017) – City University of Hong Kong.
- **Gold Medal** at the 47th International Exhibition of Inventions of Geneva for the invention “Sensor platform for rapid analysis of targets from food contaminants to disease biomarkers using disposable testing strips”.
- **Gold Medal** at the 7th International Invention Innovation Competition (Toronto, Canada) for the invention “A new generation of dissolved oxygen sensor using replaceable photosensing film”.

SUPERVISION OF GRADUATE STUDENTS

2019 - 2021 PhD (4); Master Students (5) - Primary Supervisor
James Watt School of Engineering, University of Glasgow, Glasgow, U.K

2008 – 2019 PhD (16); Master Students (20) - Primary Supervisor
Department of Materials Science and Engineering, City University of Hong Kong.

2005-2008 PhD (2) & Master Students (3) - Co-Supervisor, Department of Chemistry, The University of Hong Kong.

TEACHING ACTIVITIES

2019 – 2022 Courses on Electronic devices, James Watt School of Engineering, University of Glasgow, Glasgow, U.K

2008 – 2019 Courses on Electronic Devices, and Materials physics, Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong.

ORGANISATION OF SCIENTIFIC MEETINGS

2015 - 2018 **Program Committee** - Printed Memories and Logic I, **SPIE Optics & Photonics**, San Diego, USA; (the largest event for the photonics/optics society)

2014 **Chair** - International Conference for Leading and Young Materials Scientists (IC-LYMS 2014), Asia Pacific Society for Materials Research, Sanya

2013 APCCOM2013 (Asia Pacific Conference of Chemistry of Materials).

INSTITUTIONAL RESPONSIBILITIES

2019 – Director, Glasgow – UESTC (Chengdu), dual PhD program

2022 – Co-director, Communication, Sensing & Imaging, University of Glasgow

2013 – 2019 RAE (Research Assessment Exercise) coordinator (MSE), City University of Hong Kong

2017 – 2019 Program leader (MSE), Graduate Studies, City University of Hong Kong

2012 – 2017 Safety Officer, City University of Hong Kong

2009 – 2015 Department Accommodation Officer, City University of Hong Kong

2011 – 2015 Member of College platform for advanced microscopy, City University of Hong Kong

SERVICES

2021 – Panel member, FCT - Portuguese funding agency, Portugal

2018 – 2021 Scientific Advisory Board, Portalyze (HK) Limited, Hong Kong

2017 – 2021 Review Board, Fast sensor technology company limited, Hong Kong

2017 – 2021 Executive Board Member, **Hong Kong STEM alliance**, Hong Kong
2017 – 2019 Scientific Advisory Board, Aquabits, Hong Kong
2017 – Scientific Evaluator, European Research Council,
ESF (EU); Agency for Science, Technology and Research, Singapore
2005 – Reviewer for ACS, RSC, Wiley, Elsevier Journals

MEMBERSHIPS OF ORGANISATIONS

2019 – Founding Member, POSENDE, Scotland, UK
2018 – Founding Member, Portalyze (HK) Limited, Hong Kong
2017 – Associated Editor, IET - Nanobiotechnology
2010 – Member, Research Network “MRS” & SPIE

Grant record as Principal Investigator (PI) past 5 years:

Number of peer-reviewed external grants as PI = 6

- Multibit Lowcost Flexible Flash Memory (No: 9440095)
- Printed Memories with Long Retention Time (N0: 9667072)
- Electronic Sensor Array with Sensitive and Selective Detection of Amines for Food Safety (No: 9440128)
- Safe Physical Sensory Systems for Human-Robot Collaborative Tasks (No: 9443901)
- A Water Profile Monitoring Early Warning System to Detect Contaminants (UIM 371)
- Sensing Device for Six Common Phthalates in Plastic (UIM 383)

Projects in mainland China (PI)

- 1) Project - **Rapid Detection Technology for Marine Chemical Contaminants**
Source: *State Oceanic Administration (PRC)*
Funded amount- 21 million RMB [16CZB020SF11]
Duration- **01-01-2017 to 31-12-2020**
Partners – Fisheries College, Jimei University; XMinnov; China Customs

Grant record as Co-Principal Investigator in major projects

RGC of Hong Kong Theme-based Research Scheme

1. Title: **A Compact System for Terahertz Imaging and Spectroscopy**
Funded Amount: 28 million HK\$
Project Duration: 2017 to 2021
2. Title: **Intelligent Robotics for Elderly Assistance in Hong Kong**
Funded Amount: 43 million HK\$
Project Duration: 2020 to 2023