



CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

LÝ LỊCH KHOA HỌC

(Dành cho ứng viên/thành viên các Hội đồng Giáo sư)

1. Thông tin chung

- Họ và tên: Nguyễn Đức Hòa
- Năm sinh: 1978
- Giới tính: Nam
- Trình độ đào tạo (TS, TSKH) (năm, nơi cấp bằng): TS, 2009, Hàn Quốc
- Chức danh Giáo sư (năm, nơi bổ nhiệm): 2020, Đại học Bách Khoa Hà Nội.
- TS danh dự, Uppsala University, 2022, Thụy Điển.
- Ngành, chuyên ngành khoa học: Vật lý, Vật lý chất rắn
- Chức vụ và đơn vị công tác hiện tại (hoặc đã nghỉ hưu từ năm): Phó Hiệu trưởng Trường Vật liệu – Đại học Bách khoa Hà Nội
- Phó chủ tịch Hội khoa học Vật liệu, 2023-2028
- Chức vụ cao nhất đã qua: Phó viện trưởng viện Đào tạo Quốc tế về Khoa học Vật liệu (ITIMS)
- Thành viên hội đồng ngành Vật lý – Quỹ Nafosted: 2020-2023; 2023-2024;
- Thành viên Hội đồng Giáo sư cơ sở (nếu có) (năm tham gia, tên hội đồng, cơ sở đào tạo):

Năm 2020, Hội đồng Giáo sư cơ sở, Trường Đại học Bách Khoa Hà Nội

Năm 2021, Hội đồng Giáo sư cơ sở, Trường Đại học Bách Khoa Hà Nội

Năm 2022, Hội đồng Giáo sư cơ sở, Trường Đại học Bách Khoa Hà Nội

Năm 2023, Hội đồng Giáo sư cơ sở, Đại học Bách Khoa Hà Nội

2. Thành tích hoạt động đào tạo và nghiên cứu (thuộc chuyên ngành đang hoạt động)

2.1. Sách chuyên khảo, giáo trình

a) Tổng số sách đã chủ biên: 1 sách chuyên khảo; 0 giáo trình.

b) Danh mục sách chuyên khảo, giáo trình trong 05 năm liền kề với thời điểm được bổ nhiệm thành viên Hội đồng gần đây nhất (tên tác giả, tên sách, nhà xuất bản, năm xuất bản, mã số ISBN, chỉ số trích dẫn).

1. Cảm biến khí trên cơ sở các cấu trúc nano ôxít kim loại bán dẫn, Chủ biên; Nhà xuất bản Bách khoa Hà Nội, quý II, 2019; ISBN: 978-604-95-0848-6

2.2. Các bài báo khoa học được công bố trên các tạp chí khoa học

a) Tổng số đã công bố: ~10 bài báo tạp chí trong nước; ~150 bài báo tạp chí

quốc tế.

b) Danh mục bài báo khoa học công bố trong 05 năm liền kề với thời điểm được bổ nhiệm thành viên Hội đồng gần đây nhất (*tên tác giả, tên công trình, tên tạp chí, năm công bố, chỉ số IF và chỉ số trích dẫn - nếu có*):

- *Danh mục các bài báo quốc tế (SCIE)*:

1. Van Duy, L., Thi Nguyet, T., Hung, C.M., Van Duy, N., Hoa, N.D., Catini, A., Magna, G., Paolesse, R., Biasioli, F., Tonezzer, M., Di Natale, C. Light-assisted room temperature ammonia gas sensor based on porphyrin-coated V2O5 nanosheets 2024 *Sensors and Actuators B: Chemical* 409 135582
10.1016/j.snb.2024.135582
2. Duoc, V.T., Nguyen, H., Ngoc, T.M., Xuan, C.T., Hung, C.M., Duy, N.V., Hoa, N.D. Hydrogen gas sensor based on self-heating effect of SnO2/Pt thin film with ultralow power consumption 2024 *International Journal of Hydrogen Energy* 61 774 782
10.1016/j.ijhydene.2024.02.180
3. Zhang, Y., Yao, H., Xue, C., Xu, Y., Yi, C., Sun, Y., Cui, S., Hoa, N.D., Jouyban, A., Jin, H., Cui, D. Au Nanostars Coated with a Thin Film of MIL-100 (Fe) for SERS-Based Sensing of Volatile Organic Compound Indicators in Saliva 2024 *ACS Applied Nano Materials* 7 3 2735 2743 10.1021/acsanm.3c04835
4. Tan, N.H., Phu, L.T.N., Van Duc, T., Nhi, D.L.T., Nga, D.T., Le, D.T.T., Khanh, H.Q., Hoa, N.D. Synthesis of indium oxide nanofibers using electrospinning method towards gas sensor application 2024 *Vietnam Journal of Chemistry* 10.1002/vjch.202300348
5. Xu, Y., Liu, Z., Lin, J., Zhao, J., Hoa, N.D., Hieu, N.V., Ganeev, A.A., Chuchina, V., Jouyban, A., Cui, D., Wang, Y., Jin, H. Integrated Smart Gas Tracking Device with Artificially Tailored Selectivity for Real-Time Monitoring Food Freshness 2023 *Sensors* 23 19 8109 10.3390/s23198109
6. Tonezzer, M., Masera, L., Thai, N.X., Nguyen, H., Duy, N.V., Hoa, N.D. Miniaturized multisensor system with a thermal gradient: Performance beyond the calibration range 2023 *Journal of Science: Advanced Materials and Devices* 8 3 100562 10.1016/j.jsamd.2023.100562
7. Cheng, Y., Li, Z., Tang, T., Wang, X., Hu, X., Xu, K., Hung Chu, M., Hoa, N.D., Xie, H., Yu, H., Chen, H., Ou, J.Z. 3D self-assembled indium sulfide nanoreactor for in-situ surface covalent functionalization: Towards high-performance room-temperature NO2 sensing 2023 *Journal of Colloid and Interface Science* 645 86 95 15 10.1016/j.jcis.2023.04.157
8. Tang, T., Li, Z., Cheng, Y.F., Xie, H.G., Wang, X.X., Chen, Y.L., Cheng, L., Liang, Y., Hu, X.Y., Hung, C.M., Hoa, N.D., Yu, H., Zhang, B.Y., Xu, K., Ou, J.Z. In-situ mechanochemically tailorable 2D gallium oxyselenide for enhanced optoelectronic NO2 gas sensing at room temperature 2023 *Journal of Hazardous Materials* 451 131184 30 10.1016/j.jhazmat.2023.131184
9. Phuoc, P.H., Viet, N.N., Chien, N.V., Van Hoang, N., Hung, C.M., Hoa, N.D., Van Duy, N., Hong, H.S., Trung, D.D., Van Hieu, N. Comparative study of CuO/Co3O4 external and CuO-Co3O4 internal heterojunctions: Do these factors always enhance gas-sensing performance? 2023 *Sensors and Actuators B: Chemical* 384 133620 3 10.1016/j.snb.2023.133620

10. Nguyet, T.T., Thanh Le, D.T., Van Duy, N., Xuan, C.T., Ingebrandt, S., Vu, X.T., Hoa, N.D. A high-performance hydrogen gas sensor based on Ag/Pd nanoparticle-functionalized ZnO nanoplates 2023 RSC Advances 13 19 13017 13029 4
10.1039/d3ra01436c
11. Thi Thanh Le, D., Long, N.D.H., Thi Xuan, C., Van Toan, N., Hung, C.M., Van Duy, N., Thi Theu, L., Dinh, V.A., Hoa, N.D. Porous CoFe₂O₄ nanorods: VOC gas-sensing characteristics and DFT calculation 2023 Sensors and Actuators B: Chemical 379 133286 13 10.1016/j.snb.2023.133286
12. Van Duy, N., Trang, D.T.T., Le, D.T.T., Hung, C.M., Tonezzer, M., Nguyen, H., Hoa, N.D. Enhancement of NH₃ gas sensing with Ag-Pt co-catalyst on SnO₂ nanofilm towards medical diagnosis 2023 Thin Solid Films 767 139682 8 10.1016/j.tsf.2023.139682
13. Tang, T., Li, Z., Cheng, Y.F., Xu, K., Xie, H.G., Wang, X.X., Hu, X.Y., Yu, H., Zhang, B.Y., Tao, X.W., Hung, C.M., Hoa, N.D., Chen, G.Y., Li, Y.X., Ou, J.Z. Single-step growth of p-type 1D Se/2D GeSexOy heterostructures for optoelectronic NO₂ gas sensing at room temperature 2023 Journal of Materials Chemistry A 11 12 63616374 26 10.1039/d2ta06255k
14. Van Duy, L., Nguyet, T.T., Le, D.T.T., Van Duy, N., Nguyen, H., Biasioli, F., Tonezzer, M., Di Natale, C., Hoa, N.D. Room Temperature Ammonia Gas Sensor Based on p-Type-like V₂O₅ Nanosheets towards Food Spoilage Monitoring 2023 Nanomaterials 13 1 146 16 10.3390/nano13010146
15. Nguyet, T.T., Van Duy, L., Nguyet, Q.T.M., Xuan, C.T., Le, D.T.T., Hung, C.M., Van Duy, N., Hoa, N.D. Novel Synthesis of a PANI/ZnO Nanohybrid for Enhanced NO₂ Gas Sensing Performance at Low Temperatures 2023 Journal of Electronic Materials 52 1 304 319 10.1007/s11664-022-09990-0
16. Son, D.N., Van Duy, N., Hoa, N.D. Controlled Growth of Indium Oxide Nanowires for Gas Sensing Application 2023 Recent Patents on Nanotechnology 17 2 159 164 1 10.2174/1872210515666210930193811
17. Duong, T.T.H., Hau, H.H., Hong, L.T., Vu, L.A., Hung, C.M., Duy, N.V., Hieu, N.V., Hoa, N.D. PtO₂-decorated MoS₂ ultrathin nanostructures for enhanced NH₃ gas sensing properties 2022 Materials Science in Semiconductor Processing 151 106990 9 10.1016/j.mssp.2022.106990
18. Oanh, V.T., Xuan, C.T., Tu, L.M., Viet, N.X., Hoa, N.D. Instant Facile Method for the In Situ Growth of Ni(OH)₂ Nanohives on Nickel Foam for Non-Enzymatic Electrochemical Glucose Sensor 2022 Journal of the Electrochemical Society 169 11 117506 7 10.1149/1945-7111/aca053
19. Son, D.N., Hung, C.M., Thi Thanh, L.D., Thi Xuan, C., Van Duy, N., Dich, N.Q., Nguyen, H., Van Hieu, N., Hoa, N.D. A novel design and fabrication of self-heated In₂O₃ nanowire gas sensor on glass for ethanol detection 2022 Sensors and Actuators A: Physical 345 113769 10.1016/j.sna.2022.113769
20. Thi Xuan, C., Hung, C.M., Van Duy, N., Ngoc, T.M., Thi Minh Nguyet, Q., Hoa, N.D. Arc-discharge deposition of SWCNTs over SnO₂ nanowires for highly sensitive NO₂ gas sensor 2022 Advances in Natural Sciences: Nanoscience and Nanotechnology 13 3 35007 1 10.1088/2043-6262/ac87a3

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10.1149/2162-8777/ac5c7f
23. Cheng, Y., Li, Z., Tang, T., Xu, K., Yu, H., Tao, X., Hung, C.M., Hoa, N.D., Fang, Y., Ren, B., Chen, H., Ou, J.Z. 3D micro-combs self-assembled from 2D N-doped In₂S₃ for room-temperature reversible NO₂ gas sensing 2022 Applied Materials Today 26 101355 21 10.1016/j.apmt.2021.101355
24. Tonezzer, M., Thi Thanh Le, D., Van Duy, L., Hoa, N.D., Gasperi, F., Van Duy, N., Biasioli, F. Electronic noses based on metal oxide nanowires: A review 2022 Nanotechnology Reviews 11 1 897 925 2
10.1515/ntrev-2022-0056
25. Van Duy, N., Thai, N.X., Ngoc, T.M., Thi Thanh Le, D., Hung, C.M., Nguyen, H., Tonezzer, M., Van Hieu, N., Hoa, N.D. Design and fabrication of effective gradient temperature sensor array based on bilayer SnO₂/Pt for gas classification 2022 Sensors and Actuators B: Chemical 351 130979
15 10.1016/j.snb.2021.130979
26. Oanh, V.T., Xuan, C.T., Tu, L.M., Hoa, N.D. A Simple Chemical Procedure for Direct Synthesis of NiO on Nickel Foam Electrode Applied in Non-enzymatic Glucose Electrochemical Measurements 2022 Lecture Notes in Networks and Systems 366 LNNS 100 106 10.1007/978-3-030-92574-1_10
27. Hanh, N.H., Duy, L.V., Hung, C.M., Xuan, C.T., Duy, N.V., Hoa, N.D. High-performance acetone gas sensor based on Pt-Zn₂SnO₄ hollow octahedra for diabetic diagnosis 2021 Journal of Alloys and Compounds 886 161284
55 10.1016/j.jallcom.2021.161284
28. Hau, H.H., Duong, T.T.H., Man, N.K., Thi Viet Nga, T., Thi Xuan, C., Thi Thanh Le, D., Van Toan, N., Hung, C.M., Van Duy, N., Van Hieu, N., Hoa, N.D. Enhanced NO₂ gas-sensing performance at room temperature using exfoliated MoS₂ nanosheets 2021 Sensors and Actuators A: Physical 332 113137
28 10.1016/j.sna.2021.113137
29. Duoc, V.T., Hung, C.M., Nguyen, H., Duy, N.V., Hieu, N.V., Hoa, N.D. Room temperature highly toxic NO₂ gas sensors based on rootstock/scion nanowires of SnO₂/ZnO, ZnO/SnO₂, SnO₂/SnO₂ and, ZnO/ZnO 2021 Sensors and Actuators B: Chemical 348 130652 40 10.1016/j.snb.2021.130652
30. Dang, T.K., Son, N.T., Lanh, N.T., Phuoc, P.H., Viet, N.N., Thong, L.V., Hung, C.M., Duy, N.V., Hoa, N.D., Hieu, N.V. Extraordinary H₂S gas sensing performance of ZnO/rGO external and internal heterojunctions 2021 Journal of Alloys and Compounds 879 160457 23 10.1016/j.jallcom.2021.160457
31. Van Duy, L., Nguyet, T.T., Hung, C.M., Thanh Le, D.T., Van Duy, N., Hoa, N.D., Biasioli, F., Tonezzer, M., Di Natale, C. Ultrasensitive NO₂ gas sensing performance of two dimensional ZnO nanomaterials: Nanosheets and nanoplates 2021 Ceramics International 47 20 28811 28820 30
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33. Hanh, N.H., Ngoc, T.M., Van Duy, L., Hung, C.M., Van Duy, N., Hoa, N.D. A comparative study on the VOCs gas sensing properties of Zn₂SnO₄ nanoparticles, hollow cubes, and hollow octahedra towards exhaled breath analysis 2021 Sensors and Actuators, B: Chemical 343 130147 27 10.1016/j.snb.2021.130147
34. Hung, C.M., Van Duy, L., Thanh Le, D.T., Nguyen, H., Van Duy, N., Hoa, N.D. ZnO coral-like nanoplates decorated with Pd nanoparticles for enhanced VOC gas sensing 2021 Journal of Science: Advanced Materials and Devices 6 3 453 461 20 10.1016/j.jsamd.2021.05.005
35. Hung, N.M., Hung, C.M., Duy, N.V., Hoa, N.D., Hong, H.S., Dang, T.K., Viet, N.N., Thong, L.V., Phuoc, P.H., Van Hieu, N. Significantly enhanced NO₂ gas-sensing performance of nanojunction-networked SnO₂ nanowires by pulsed UV-radiation 2021 Sensors and Actuators, A: Physical 327 112759 31
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38. Van Toan, N., Hung, C.M., Hoa, N.D., Van Duy, N., Thi Thanh Le, D., Thi Thu Hoa, N., Viet, N.N., Phuoc, P.H., Van Hieu, N. Enhanced NH₃ and H₂ gas sensing with H₂S gas interference using multilayer SnO₂/Pt/WO₃ nanofilms 2021 Journal of Hazardous Materials 412 125181 10.1016/j.jhazmat.2021.125181
39. Nha, H.T., Van Tong, P., Van Duy, N., Hung, C.M., Hoa, N.D. Facile synthesis of Pd-CuO Nanoplates with Enhanced SO₂ and H₂ Gas-Sensing Characteristics 2021 Journal of Electronic Materials 50 5 2767 2778 10
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45. Thai, N.X., Van Duy, N., Hung, C.M., Nguyen, H., Tonezzer, M., Van Hieu, N., Hoa, N.D. Prototype edge-grown nanowire sensor array for the real-time monitoring and classification of multiple gases 2020 Journal of Science: Advanced Materials and Devices 5 3 409 416 18 10.1016/j.jsamd.2020.05.005
46. Thai, N.X., Tonezzer, M., Masera, L., Nguyen, H., Duy, N.V., Hoa, N.D. Multi gas sensors using one nanomaterial, temperature gradient, and machine learning algorithms for discrimination of gases and their concentration 2020 Analytica Chimica Acta 1124 85 93 33 10.1016/j.aca.2020.05.015
47. Van Hoang, N., Hung, C.M., Hoa, N.D., Van Duy, N., Van Toan, N., Hong, H.S., Hong Van, P.T., Son, N.T., Yoon, S.-G., Van Hieu, N. Enhanced H₂S gas-sensing performance of α -Fe₂O₃ nanofibers by optimizing process conditions and loading with reduced graphene oxide 2020 Journal of Alloys and Compounds 826 154169 32 10.1016/j.jallcom.2020.154169
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2.3. Các nhiệm vụ khoa học và công nghệ (chương trình và đề tài tương đương cấp Bộ trở lên)

a) Tổng số chương trình, đề tài đã chủ trì/chủ nhiệm: 4 cấp Nhà nước, Nafosted; cấp Bộ và tương đương.

b) Danh mục đề tài tham gia đã được nghiệm thu trong 05 năm liền kề với thời điểm được bổ nhiệm thành viên Hội đồng gần đây nhất (*tên đề tài, mã số, thời gian thực hiện, cấp quản lý đề tài, trách nhiệm tham gia trong đề tài*):

1. Nghiên cứu chế tạo vật liệu lai nano ZnO /polyme dẫn nhằm ứng dụng trong cảm biến khí VOCs, B2021-BKA-07, thành viên

2. Cảm biến các hợp chất hữu cơ dễ bay hơi độ nhạy cao dựa trên các oxit kim loại có cấu trúc rỗng nhằm phân tích hơi thở, 103.02-2020.18, 2020-2023; Nafosted, chủ nhiệm

3. Development of gas nanosensors for the internet of things (IoT)

applications towards non-invasive disease diagnoses, VINIF.2019.DA.10, 2019-2023, VINIF, Chủ nhiệm.

2.4. Công trình khoa học khác

a) Tổng số công trình khoa học khác:

- Tổng số có: 03 sáng chế, giải pháp hữu ích

b) Danh mục bằng độc quyền sáng chế, giải pháp hữu ích, tác phẩm nghệ thuật, thành tích huấn luyện, thi đấu trong 5 năm trở lại đây (*tên tác giả, tên công trình, số hiệu văn bằng, tên cơ quan cấp*):

1. Direct heating and/or self heating micro gas sensor, Nguyễn Đức Hòa, Nguyễn Văn Duy, Chủ Mạnh Hưng, Nguyễn Văn Toán, Hugo Minh Hung Nguyen, Bằng độc quyền sáng chế, SE543677C2, Thụy Điển.

2. Cảm biến khí NH₃ dạng màng mỏng (SnO₂/WO₃), Nguyễn Văn Toán, Nguyễn Văn Hiếu, Nguyễn Văn Duy, Nguyễn Đức Hòa, Chủ Mạnh Hưng, giải pháp hữu ích, mã số: 2270; Việt Nam.

3. Quy trình chế tạo cảm biến khí trên cơ sở sợi nano SnO₂ xốp để phát hiện khí H₂S nồng độ siêu thấp bằng kỹ thuật phun tĩnh điện, Chủ Mạnh Hưng, Nguyễn Văn Toán, Nguyễn Văn Hiếu, Nguyễn Văn Duy, Nguyễn Đức Hòa, Bằng độc quyền sáng chế; Số: Số 39477; QĐ số 980w/QĐ-SHTT, Việt Nam.

2.5. Hướng dẫn nghiên cứu sinh (NCS) đã có quyết định cấp bằng tiến sĩ

a) Tổng số: 01 NCS đã hướng dẫn chính

b) Danh sách NCS hướng dẫn thành công trong 05 năm liền kề với thời điểm được bổ nhiệm thành viên Hội đồng gần đây nhất (*Họ và tên NCS, đề tài luận án, cơ sở đào tạo, năm bảo vệ thành công, vai trò hướng dẫn*):

1. Phạm Văn Tòng, Nghiên cứu chế tạo vật liệu nano bằng phương pháp hóa học ứng dụng cho hệ đa cảm biến khí, Đại học Bách khoa Hà Nội, 2017; Hướng dẫn chính.

2. Nguyễn Hồng Hanh, Nghiên cứu chế tạo ô xít kim loại Zn₂SnO₄ nhằm ứng dụng cho cảm biến hơi hợp chất hữu cơ; Đại học Bách khoa Hà Nội, 2022; Đồng hướng dẫn.

3. Các thông tin khác

3.1. Danh mục các công trình khoa học chính trong cả quá trình:

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3.2. Giải thưởng về nghiên cứu khoa học trong và ngoài nước (nếu có):

- Giải thưởng nhà nước về khoa học công nghệ, năm 2021

3.3. Các thông tin về chỉ số định danh ORCID, hồ sơ Google scholar, H-index, số lượt trích dẫn:

Googlescholar:

<https://scholar.google.com.vn/citations?user=R3NXTncAAAAJ&hl=vi>

H-index: 55

Số trích dẫn: > 7631

3.4. Ngoại ngữ

- Ngoại ngữ thành thạo phục vụ công tác chuyên môn: Tiếng Anh

- Mức độ giao tiếp bằng tiếng Anh: Thành thạo (7 năm công tác tại nước ngoài, luận án TS viết bằng tiếng Anh)

Tôi xin cam đoan những điều khai trên là đúng sự thật, nếu sai tôi xin hoàn toàn chịu trách nhiệm trước pháp luật.

Hà Nội, ngày 6 tháng 5 năm 2024

NGƯỜI KHAI

(Ký và ghi rõ họ tên)



GS.TS. Nguyễn Đức Hòa