**Vision:** To be a Gardener of Knowledge. **Mission:** Learn more, Do more, Share more. **Personality:** ENFJ-A (16personalities.com).**Top 5 Core character traits:** Coach, Deliverer, Believer, Philomath, Catalyst. (high5test.com) **Language:** English, Chinese, Bahasa Indonesia.**Talent Status:** Shanghai City Type A Foreign Talent.

## Contact


Tongchuan Rd. 1422,
Putuo District,
Shanghai, P.R. China

+86 1522 123 5523

domi@dominikusbrian.com

github.com/dominikusbrian


## Education

**09/2020 - 01/2023**

**New York University (NYU)**

Chemistry, Theory & Computation (Ph.D Candidate → M.Sc.)

Dissertation topic: Charge Transfer Landscape in the Condensed Phase: Simulation and Modelling of Photoinduced Charge Transfer of Organic Photovoltaics Molecule

**09/2017 - 03/2020**

**University of Michigan - Shanghai Jiao Tong University Joint Institute**

Power Engineering and Engineering Thermophysics (M.Sc.)

Master's thesis: Droplet Impact, Spreading, and Wetting of Perovskite and PEDOT: PSS Solutions.

## Biography

Dominikus Brian (钟鸿盛) is a researcher, analyst, and engineer passionate in global energy transition and sustainable development. Domi have a keen focus toward contributing to the realization of global energy internet ecosystem and the upcoming energy economy of the future. Domi is an industrious well-rounded researcher trained in both theoretical, computational, and experimental science and engineering covering the field of energy, power, nanotechnology, advanced materials, AI for Science, and machine learning. Domi is an avid reader and gardener living in Shanghai, China.

## Work & Leadership Experience

**LONGi Solar, Central R&D Institute** — **03/2023 - Present**

Senior Staff Engineer, Research of Innovation Strategy

In my role as an engineer for research and innovation strategy, I contemplate, survey, and assess various technological roadmap for the future of energy and photovoltaics (PV) material. In particular, I specialized in understanding and developing photovoltaics materials and emerging devices for future energy market. Main research topics are: Integrated PV Thermal System(PVT), Vehicle Integrated Pv(VIPV), Vehicle-to-grid(V2G), Edge Energy system, Smart PV, AI for science : Large-Language Model based scientific literature review and data sourcing, Digitalization and AI-integration into new material research through algorithm and data architecture. Green Methanol and Hydrogen industrialization and emerging applications.

**New York University Shanghai.** — **08/2022 - 01/2023**

Member of the Interdisciplinary Colloquium Organizing Committee

The interdisciplinary colloquium (IDC) organizing committee was established to facilitate interdisciplinary interactions among the STEM faculties, postdocs and PhD students, aiming to bring together people with different backgrounds, and brainstorm new research projects. The program developed by the IDC focus on promoting discussion around the future of interdisciplinary research at NYU Shanghai. I am contributing to the committee in my role as a PhD student leadership representative.

**Dept. of Chemistry New York University | Division of Arts and Science NYU Shanghai | NYU-ECNU Center for Computational Chemistry** — **09/2020 - 01/2023**

Graduate Research Fellow

Develop computational model and calculation protocol for investigating the conformation and chemical space of organic photovoltaics molecule. Worked with the theoretical background framework for charge transfer and quantum dynamics in condensed phase molecular systems. Perfomed and develop in-house code, software, and interface for big data analysis, machine learning, and scientific computation. Mastered the basics operation and management of supercomputer platform.

**Coal, Metals, and Mineral Trade Broker Intern** — **09/2021 - 12/2022**

ZHF Trade

Work on prospecting, inspection, and dealing of information and lead for coal, metals, and minerals supply from Indonesia. Perform due-diligence on company financial and the coal quality based on certification and analysis proof. Go through and negotatiate terms and condition with supplier (Indonesian Miners and Shippers) and end customers (Chinese traders and power plants).

**09/2013 - 07/2017**

**Shandong University of Science and Technology**

Chemical Engineering and Technology (B.Sc.)

Bachelor's thesis: Investigation of Self-Cooling Thermoelectric Device for Waste Heat Energy Harvesting.

## Skills

### Computational

C++ ▪ Python ▪ Unix/Linux ▪ HPC ▪ Machine Learning ▪ Git ▪ Jupyter Notebook & Lab ▪ Julia ▪ Machine Learning (scikit-learn, PyTorch, TensorFlow) ▪ Big Data ▪ VMD ▪ AutoCAD ▪ COMSOL ▪ Adobe (Illustrator & Photoshop) ▪ Maya ▪ SOLIDWORKS ▪ ImageJ ▪ FIJI ▪ Origin ▪ MATLAB ▪ Aspen plus ▪ ANSYS ▪ Quantum Chemisty (Gaussian, QChem, Terachem, Turbomole, Orca).

### Experimental

General wet and analytical chemistry ▪ Spray Coating, Spin Coating, and Blade Coating ▪ 3D-printing ▪ Tensiometer ▪ Rheometer ▪ CMOS High-Speed imaging ▪ Surface Profilometry ▪ SEM ▪ XRD ▪ AFM ▪ CLSM ▪ Glovebox ▪ 3D Laser Vibrometer ▪ I-V Curve measurement ▪ UV-vis Spectroscopy .

### Theoretical

Photovoltaics ▪ Fluid Mechanics ▪ Charge Transfer ▪ Thermoelectric ▪ Thin Film Fabrications ▪ Droplet ▪ Wetting and Surface Science ▪ Quantum Mechanics ▪ Soft Matter Physics ▪ Statistical Mechanics ▪ Quantum Chemistry ▪ Material Science ▪ Material Informatics ▪ Nanotechnology.

**Laboratory of Thin Liquid and Solid Films and Photovoltaics of UM-SJTU** — **09/2017 - 03/2020**

Lab Member, Safety Coordinator, Technical Engineer

Investigation of droplet impact on heated liquid surface. Developing a low-cost and scalable droplet-based thin film fabrication methods and instrument for printing of advanced materials. Droplet impact, spreading, and wetting of Perovskite and PEDOT: PSS and their application in the printing of thin film solar cells.

**Frontier in Innovative Technology (FIT) Young Investigator Symposium at UM-SJTU** — **09/2019**

Participant / Volunteer

Participate in the conference focusing on various advance technology in energy and health. Volunteer in the event organization and reception of invited guest.

**The 3rd International RenDanHeYi Model Forum** — **09/2019**

1-on-1 bilingual interpreter for VIP experts and leaders

Personal assistant to Nobel Laurates Economist, Management thinking leaders attending the conference. Liaison with event organizer.

**The 1st Material Surface & Interface International Academic Forum - Jiangsu University of Technology** — **04/2019**

Invited speaker / Volunteer Facilitator

Invited speaker in the lecture series session. A volunteer facilitator to bridge the communication between invited VIP experts with the organizing committee of the host university.

**SJTU Global Engagement Program – Bangladesh Challenge** — **11/2018 - 02/2019**

Coordinator team member and field trip team leader

Work with the other coordination team members for the planning of the project. Lead team members in the field trip to Thailand and Bangladesh.

**University of Michigan – Shanghai Jiao Tong University Graduate Student Union** — **07/2018 - 06/2019**

Deputy Chairman

Lead the departments of art and sports and coordinate various events in the college.

**Michigan China Center** — **08/2018 - 09/2018**

Market Analyst & Program Assistant

Perform market analysis on the topic of autonomous driving cars. Handle local business development task in China for trade partner from Michigan States.

**Indonesian Students' Association in China (Under the direct jurisdiction of the Indonesian Embassy)** — **03/2014 - 05/2015**

Nationwide Headquarter Deputy Treasurer and Founder & First Chairman of the Qingdao Branch

Established new organization branch in Qingdao city and served more than 12,000 Indonesian students studying in China.

## Interests

- Energy Internet and Energy Prosumers
- AI4Science: Digitalization and AI integration for New Material RnD
- Industrialization of Emerging Energy Materials
- Digital Twins
- Material Informatics
- Autonomous Laboratories
- Garden & Landscape
- Orphan Education
- Culinary and Pastry
- Swimming, Table Tennis, Tennis, Bowling, Volleyball, Ultimate Frisbee

## Test Scores

- GRE : 314
- TOEFL : 107
- IELTS : 7.0
- HSK 6 : 242
- HSK 5: 259

## Selected Awards & Honors

**New York University (NYU) Shanghai Doctoral Fellowship** — 2020 - 2024

**China Scholarship Council Master degree Full Scholarship Type A for International Student** — 2017-2020

**3rd prize winner - China Global Television Network (CGTN) Belt and Road essay contest** — 2019

**KLA-Tencor Scholarship of UM-SJTU Joint Institute ; U21/PwC Innovation Challenge-Global Finalist** — 2018

## Publications

9. **Dominikus Brian**, Xiang Sun*, Charge Transfer Landscape Manifesting Structure-Rate Relationship in the Condensed Phase via Machine Learning, *J. Phys. Chem. B*, 125, 13267-13278 **(2021)** .
8. **Dominikus Brian**, Xiang Sun*, Generalized Quantum Master Equation: A Tutorial Review and Recent Advances, *Chin. J. Chem. Phys.* 34, 5, 497-524 **(2021)**.
7. Zhubin Hu, **Dominikus Brian**, Xiang Sun*, Multi-State Harmonic Models with Globally Shared Bath for Nonadiabatic Dynamics in the Condensed Phase, *J. Chem. Phys.* 155, 124105 **(2021)**.
6. **Dominikus Brian**, Zengkui Liu, Barry D. Dunietz, Eitan Geva, Xiang Sun*, Three-State Harmonic Models for Photoinduced Charge Transfer, *J. Chem. Phys.* 154, 174105 **(2021)**.
5. **Dominikus Brian**, Xiang Sun*, Linear-Response and Nonlinear-Response Formulations of the Instantaneous Marcus Theory for Nonequilibrium Photoinduced Charge Transfer, *J. Chem. Theory Comput.* 17, 2065-2079 **(2021)**.
4. **Dominikus Brian**, Morteza Eslamian*, Design and Development of a Coating Device: Multiple-Droplet Drop-Casting (MDDC-Alpha), *Rev. Sci. Instrum.*, 91, 033902 **(2020)**.
3. **Dominikus Brian**, Morteza Eslamian*, Analysis of Impact Dynamics and Deposition of Single and Multiple PEDOT: PSS Solution Droplets, *Exp. Fluids*, 60, 1-15 **(2019)**.
2. **Dominikus Brian**, Mohammad-Reza Ahmadian-Yazdi, Claire Barratt, Morteza Eslamian*, Impact Dynamics and Deposition of Perovskite Droplets on PEDOT: PSS and TiO2 Coated Glass Substrates, *Exp. Therm. Fluid Sci.*, 105, 181-190 **(2019)**.
1. Nadia Gholampour, **Dominikus Brian**, Morteza Eslamian*, Tailoring Characteristics of PEDOT: PSS Coated on Glass and Plastics by Ultrasonic Substrate Vibration Post Treatment, *Coatings*, 8 (10), 337 **(2018)**.

*Corresponding author

愿景:
成为一名知识的园丁而奋斗。
使命:
Learn More, Do More, Share More ;
终身学习，用心做事，乐于分享。
人格类型：ENFJ-A
( 16personalities.com)
Top5 个人强项: Coach, Deliverer, Believer, Philomath, Catalyst.
( high5test.com)
语言：英语、普通话、印尼语。
人才身份：上海市A类外籍人才

## 联系方式


铜川路1422弄、普陀区、
上海市、中国

+86 1522 123 5523

domi@dominikusbrian.com

github.com/dominikusbrian


## 教育背景

**09/2020 - 01/2023**

**纽约大学**

化学（理论与计算方向）、
博士候选人→ 硕士
硕士论文: Charge Transfer Landscape in the Condensed Phase: Simulation and Modelling of Photoinduced Charge Transfer of Organic Photovoltaics Molecule

**09/2017 - 03/2020**

**上海交通大学密西根学院**

动力工程与工程热物理、硕士

硕士论文: Droplet Impact, Spreading, and Wetting of Perovskite and PEDOT: PSS Solutions.

## 个人简介

钟鸿盛(Domi)的核心研究方向是全球能源转型和可持续发展的数智化生态圈。核心研究方向为能源互联网生态及未来能源产消者。Domi是一位勤奋、全面的研究人员/市场分析师；Domi在理论、计算和实验科学与工程，及商业领域接受多年高质量培养和拥有丰富经验。核心的知识范围涉及能源、电力、光伏、纳米技术、先进材料、化工、计算机、人工智能和机器学习等领域。

## 工作、组织、领导力经验

**隆基绿能，中央研究院** — **03/2023 - 至今**
创新布局研究高级主任工程师

核心布局工作主题:
(1) 未来能源体系的新材料和复杂系统：光伏光热一体化（PVT）,柔性光伏，车载光伏（VIPV）,V2G（新能源车-电网），边缘式能源，智能光伏。
(2) AI for Science：AI辅助材料信息学，新材料研发中的数智化算法及数据架构。
(3) 绿甲醇和绿氢产业化及应用场景。

**纽约大学(上海校区)** — **08/2022 - 01/2023**
跨学科学术讨论会组织委员会成员

与其他跨学科学术讨论会组织委员会的教授、老师、研究生代表提供针对于校园里各行各业的教授、博后、博士生的跨科学学术讨论平台及战略。我通过筛选与委员会选代表了全校园博士生群体的想法与意见

**纽约大学化学系| 上海纽约大学| 上海纽约大学-华东师范大学计算化学研究中心** — **04/2020 - 01/2023**
博士研究生/研究员

开发用于研究有机半导体、光伏材料构等先进材料的计算算法和机器学习模型。从事凝聚相分子系统中电荷转移和量子动力学的理论背景框架。完善并开发用于大数据分析、机器学习和科学计算的内部代码、软件、I/O、及GUI。

**交大密西根学院、液体与固体薄膜及光伏实验室** — **09/2017 - 03/2020**
核心成员、安全管理员、技术工程师

进行液滴对受热液体表面影响的深度研究。开发一种低成本、可扩展的基于液滴的薄膜制造方法和仪器，用于印刷先进材料。钙钛矿和PEDOT:PSS的液滴冲击、扩散和润湿及其在薄膜太阳能电池印刷中的应用。对于钙钛矿光伏器件的研发、制备、检测有深入的了解与经验.

**交大密西根学院创新技术前沿青年研究员研讨会** — **09/2019**
参会者、志愿者

重点讨论能源和健康领域的各种先进技术。在活动组织中担任志愿者

**第三届海尔集团人单合一模式论坛** — **09/2019**
专属于VIP嘉宾与专家的一对一双语翻译员

为多名诺奖获得者提供私人助理与翻译服务。与论坛里的的管理思想领袖与嘉宾提供与活动组织者联络/翻译/协调。

**09/2013 - 07/2017**

**山东科技大学**

化学工程与工艺、学士

学士论文: Investigation of Self-Cooling Thermoelectric Device for Waste Heat Energy Harvesting.

## 技能

### 实验/硬件

基础化学与分析化学实验▪ 喷涂、旋涂和叶片涂层▪ 3D打印▪ 张力计▪ 流变仪▪ CMOS高速成像▪ 表面轮廓测量▪ SEM ▪ XRD ▪ AFM ▪ CLSM ▪ 手套箱▪3 D激光测振仪▪ I-V曲线测量▪ UV-vis光谱。

### 理论/技术知识

光伏▪ 流体力学▪ 电子转移▪ 热电材料▪ 薄膜制备▪ 润湿与表面科学▪ 量子力学▪ 软物质物理▪ 钙钛矿▪ 有机半导体▪ 统计力学▪ 量子化学▪ 先进材料▪ 纳米技术生产与检测▪ 算法设计与分析.

### 软件/计算机

C++ ▪ Python ▪ Unix/Linux ▪ HPC ▪ Git ▪ Jupyter Notebook & Lab ▪ Julia ▪ 量子化学(Gaussian, QChem, Terachem, Turbomole, Orca) ▪ 机器学习 (scikit-learn, PyTorch, TensorFlow) ▪ 大数据▪ 分子动力学(Gromacs , Amber, OpenMM, etc. ) ▪ VMD ▪ AutoCAD ▪ COMSOL ▪ Adobe (Illustrator & Photoshop) ▪ Maya ▪ SOLIDWORKS ▪ ImageJ ▪ FIJI ▪ Origin ▪ MATLAB ▪ Aspen Plus .

## 兴趣爱好

- 能源互联网
- AI4Science：能源材料研发数智化

**江苏理工大学材料表面与界面国际学术论坛** **04/2019**
特邀讲师/志愿者辅导员

参与论坛课程讲师团。在活动系列钟作为志愿者辅导员，负责与受邀欧洲院士专家与主办大学和当地政府组委会之间的沟通/协调/翻译。

**上海交通大学全球挑战计划-孟加拉国/泰国站** **11/2018 - 02/2019**
协调员小组成员和实地考察小组组长

与指导教授及团队成员规划项目。带领团队成员实地考察泰国和孟加拉国。

**上海交通大学-密西根学院研究生学生会** **07/2018 - 06/2019**
副主席

定期进行研究生群体学习/工作生活需求和要求。带领研究生干部策划以及执行文理，体育，事业各种风趣活动。

**密西根中国中心** **08/2018 - 09/2018**
市场分析& 项目助理

对自动驾驶汽车主题进行市场分析。处理密歇根州贸易伙伴在中国的本地业务发展任务。

**交大密西根学院创业中心** **09/2018 - 10/2018**
志愿者指导员

在UM-SJTU联合研究所处理学院创业周的活动组织协调

**上海交通大学留学生学生会** **07/2018 - 12/2018**
学术部副部长

带领和协调学术部门成员之间的任务。制定并计划年度工作计划。

**在华印尼学生协会(由印尼大使馆直接管辖)** **03/2014 - 05/2015**
总部财务副部长 & 青岛分支创始人/首任主席

在青岛市成立了新的组织分支。上任总部办公室财务副部长时为1.2万多名印尼留学生策划财务/创业/事业相关活动与服务。

## 部分奖项与荣誉

纽约大学（上海校区）博士研究奖学金 **2020 - 2024**

中国留学基金委员会硕士学位国际学生**A**型全额奖学金 **2017-2020**

中国环球电视网（**CGTN**）**"**一带一路**"**征文大赛三等奖得主 **2019**

- 未来新型能源材料及工艺
- 数字孪生
- 产能建筑
- 自主式实验室
- 园林与景观
- 孤儿培养与教育
- 烹饪、烘焙、广式点心
- 游泳、乒乓球、网球、保龄球、排球、飞盘

## 语言/其他资格证

- GRE : 314
- TOEFL : 107
- IELTS : 7.0
- HSK 6 / HSK 5: 242 / 259

科磊半导体-交大密西根学院奖学金; **U21**/普华永道创新挑战-全球入围名单 **2018**

上海交通大学（**SJTU**）国际封面学生**2018** **2018**

## 期刊文章

9. **Dominikus Brian**, Xiang Sun*, Charge Transfer Landscape Manifesting Structure-Rate Relationship in the Condensed Phase via Machine Learning, *J. Phys. Chem. B*, 125, 13267-13278 **(2021)** .
8. **Dominikus Brian**, Xiang Sun*, Generalized Quantum Master Equation: A Tutorial Review and Recent Advances, *Chin. J. Chem. Phys.* 34, 5, 497-524 **(2021)**.
7. Zhubin Hu, **Dominikus Brian**, Xiang Sun*, Multi-State Harmonic Models with Globally Shared Bath for Nonadiabatic Dynamics in the Condensed Phase, *J. Chem. Phys.* 155, 124105 **(2021)**.
6. **Dominikus Brian**, Zengkui Liu, Barry D. Dunietz, Eitan Geva, Xiang Sun*, Three-State Harmonic Models for Photoinduced Charge Transfer, *J. Chem. Phys.* 154, 174105 **(2021)**.
5. **Dominikus Brian**, Xiang Sun*, Linear-Response and Nonlinear-Response Formulations of the Instantaneous Marcus Theory for Nonequilibrium Photoinduced Charge Transfer, *J. Chem. Theory Comput.* 17, 2065-2079 **(2021)**.
4. **Dominikus Brian**, Morteza Eslamian*, Design and Development of a Coating Device: Multiple-Droplet Drop-Casting (MDDC-Alpha), *Rev. Sci. Instrum.*, 91, 033902 **(2020)**.
3. **Dominikus Brian**, Morteza Eslamian*, Analysis of Impact Dynamics and Deposition of Single and Multiple PEDOT: PSS Solution Droplets, *Exp. Fluids*, 60, 1-15 **(2019)**.
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1. Nadia Gholampour, **Dominikus Brian**, Morteza Eslamian*, Tailoring Characteristics of PEDOT: PSS Coated on Glass and Plastics by Ultrasonic Substrate Vibration Post Treatment, *Coatings*, 8 (10), 337 **(2018)**.

*通讯作者