Chengyao Deng

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Spallation Neutron Source Science Center,No.1, Zhongzi Yuan Road, Dongguan,Guangdong 523803, P.R.China

Education

Sep.2023–Present Institute of High Energy Physics, University of Chinese Academy of Sciences, Beijing, MA.Eng in Computer Technology (expected in Jun. 2026)

Sep.2018–Jun.2022 School of Mechanical, Electronic and Control Engineering, Beijing Jiaotong University, Beijing, B.S. in Mechanical Engineering

Publication

- Chengyao Deng, Bionic soft robots: an overview of drive technologies and applications, *Advanced Materials Technologies* (submitted for final review)
- Chengyao Deng, 4D Printing of Magnetically Driven Soft Actuators Based on Light-cured Magnetic Composites, *Chemical Engineering Journal* (submitted for final review)
- Chengyao Deng, Amoeboid soft robot based on multi-material composite 3D printing technology, *Journal of Magnetism and Magnetic Materials*
- Chengyao Deng, Phase transition reversible 3D printing of magnetic thixotropic fluid, *Applied Materials Today*
- Chengyao Deng, Study of Dynamic Viscoelasticity of a Mineral Oil-Based Magnetic Fluid, *Magnetochemistry*

Research Grants

- Principal Investigator, China College Students Innovation and Business Training Program 2017 (in process)
- Principal Investigator, Guangdong College Students Innovation and Business Training Program 2017 (in process)
- Principal Investigator, Southern Medical University Extracurricular Scientific Research Program 2016-2017(Project number: 2010kw063)

Research Experiences

Chinese Academy of Sciences, Institute of High Energy Physics, Spallation Neutron Source Science Center (CSNS), Guangdong, China **Jun. 2023-Present**

- Independently accomplished or participated in different projects.

Project: "*A Bayesian Approach and Sequential Methods for Meta-Analysis****", xxx***

Research Assistant

- Used a Bayesian approach to determine the parameters for meta-analysis and compared its estimation effect with that of a frequentist approach.

Beijing Jiaotong University, School of Mechanical, Electronic and Control Engineering, Beijing Key Laboratory of Flow and Heat Transfer of Phase Changing in Micro and Small Scale, Beijing, China

Jan. 2020-Jun. 2023

- Independently accomplished or participated in different projects.

Project: *"4D printing of magnetic soft robots",* ***Nov.2021-Jun.2023***

Project leader

- A material with programmable internal magnetic domains has been developed through research.
- The impact of magnetic domain programming on the printability of materials was studied.

- A magnetic soft robotic system was designed and 4D printed.
- The influence of different conditions on the responsiveness of the magnetic soft robotic system was studied.

Project: *"Composite printing of amoeboid magnetic soft robots",* ***Nov.2021-Jun.2023***

Project leader

- The changes in the performance of magnetically controlled smart fluids under the influence of a magnetic field were studied.
- The printability of silicone gel materials and magnetically controlled smart fluids was studied.
- An amoeboid magnetic soft robot was designed and additively manufactured.

Project: *"Microscopic mechanism and constitutive theory research on the yield and shear-thinning characteristics of magnetic liquid",* ***Nov.2021-Jun.2023***

Research Assistant

- The yield behavior of magnetic liquid under conditions of shear stress stability was studied by observing changes in viscoelastic modulus and phase angle.
- The influence of external factors on the yield behavior of magnetic liquid was investigated.

Project: "*In-situ characterization experiments and theoretical research on the rheological properties of magnetorheological fluids****", Jan.2020-Jun.2021***

Research Assistant

- The shear-thinning behavior of magnetic liquid was studied using different measurement methods.
- The influence of external factors on its shear-thinning properties was investigated.

Awards and Scholarships

- **Third-class Scholarship**, Southern Medical University, Nov. Xx
- **Second Prize,** Mathematical Modeling Competition, Southern Medical University, Jun. xxx (Top 10%)

Activities

- **Minister,** Students' Union, School of Public Health and Tropical Medicine, Southern Medical University, xxx

Skills

Computer skills

- Programming: Python, C, C#, MATLAB, etc.
- Research software: Origin, Photoshop, Premiere, Endnote, Solidworks, SolidEdge, AutoCAD, etc.
- Experimental equipments: Rheometer MCR302