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EDUCATION

1994 – 1996	Post Doc in Immunology	Memorial Sloan-Kettering Cancer Center, U.S.A
1989 – 1993	M.D. in Microbiology and Immunology	Heidelberg University, Germany
1978 – 1982	B.Sc. in Medical Sciences	Henan Medical University, China

EXPERIENCE

1983 – 1991	Assistant and Associate	Institute of Biophysics, Chinese Academy of Science
1992 – 2007	Associate Researcher and Principal Investigator	Institute of Microbiology, Chinese Academy of Sciences
2007 –	Principal Investigator	Institute of Biophysics, Chinese Academy of Science
2006 – 2016	Vice President & Secretary-General	Biophysical Society of China
2015 – 2018	President	Asian Biophysics Association
2015 –	Member	Chinese Academy of Sciences
2024 –	Fellow	World Academy of Sciences for the Advancement of Science in Developing Countries (TWAS)

RESEARCH INTERESTS and ACHIEVEMENTS

Dr. Yan discovered a new class of catalyst based on nanomaterials and proposed the concept of nanozymes. Her discovery changed the general view that nanoparticles are chemically inert and opened many new applications for nanozymes as enzyme mimics in various major fields, which include medicine, agriculture, food production, biotechnology, and environmental protection. Dr. Yan's original research, published in 2007 and cited over 5,500, has paved the way for the emergence of the interdisciplinary field of nanozymes. She established and standardized the method to measure the catalytic activity of nanozymes and developed the first commercial nanozyme product capable of detecting Ebola, COVID-19 and tumors. Following her pioneering work, more than 12000 papers have been published by 500 laboratories across 45 countries describing 1000+ nanozymes utilized in medicine, agriculture and environmental protection. The Nanozyme was recognized as one of the top ten new technologies in 2022 by International Union of Pure and Applied Chemistry (IUPAC). Dr. Yan's contributions in the discovery and application of nanozymes have earned her a position among the top 2% scientists worldwide, she was awarded the second prize of the State Natural Science Award and received the Atlas Award, 2015. In addition, Dr. Yan is also a world-renowned expert in tumor biology due to her contributions in discovering two novel tumor targets, CD146 and Tfr1. She developed targeted therapy for tumors, and phase I clinical trials are scheduled for the end of 2025.

SELECTED PUBLICATIONS

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- [1]. Gao LZ, *et al.* & Yan XY. Intrinsic peroxidase-like activity of ferromagnetic nanoparticles. *Nat. Nanotechnol.* 2007, 2:577-583.
 - [2]. Fan KL, *et al.* & Yan XY. Magnetoferritin nanoparticles for targeting and visualizing tumour tissues. *Nat. Nanotechnol.* 2012, 7:459-464.
 - [3]. Jiang B, *et al.* & Yan XY, & Yan XY. Standardized assays for determining the catalytic activity and kinetics of peroxidase-like nanozymes. *Nat. Protoc.* 2018, 13:1506-1520.
 - [4]. Fan KL, *et al.* & Yan XY. In vivo guiding nitrogen-doped carbon nanozyme for tumor catalytic therapy. *Nat. Commun.* 2018, 9:1440.
 - [5]. Yan XY (2020). *Nanozymology*. Springer Nature. Singapore

- [6]. Ji SF, *et al.* & Yan XY, Li YD. Matching the kinetics of natural enzymes with a single-atom iron nanozyme. *Nat. Catal.* 2021, 4: 407-417.
- [7]. Zhu MS, *et al.* & Yan XY, Huang XL. Machine-learning-assisted single-vessel analysis of nanoparticle permeability in tumour vasculatures. *Nat. Nanotechnol.* 2023, 18:657-666.
- [8]. Meng XQ, *et al.* & Yan XY, Fan KL. Ultrasmall metal alloy nanozymes mimicking neutrophil enzymatic cascades for tumor catalytic therapy. *Nat. Commun.* 2024, 15:1626.