Xiaowei Tan

Senior Research Fellow, Department of Mood and Anxiety
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Research/Innovation Interests:

- Neuromodulation
- Transcranial magnetic stimulation
- Psychiatric disorder

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Biography

I received my medical training as a physician in a reputable medical school in China and then obtained my PhD in neuroscience in NUS, Singapore. I am skilled in advanced statistical analyzing and had been trained in medical device operation. Since I joined IMH in 2018, I had been actively involved in several national wide large scale epidemiological studies in mental health as well as clinical trials related with neuromodulation interventions. My research activities in those clinical trials include the patient recruitment, clinical assessment and supervised non-invasive brain stimulation interventions. I received my Transcranial Magnetic Stimulation (TMS) training from the Black Dog Institute, Australia in 2023 to enhance my TMS medical device operation skills. Currently I am leading the neurostimulation research team in IMH and overseeing the TMS research collaboration platform with various internal and external research collaborators and industry partners.

Selected Publications

- Tan XW, …, Tor PC. Efficacy of Using Intermittent Theta Burst Stimulation to Treat Negative Symptoms in Patients with Schizophrenia—A Systematic Review and Meta-Analysis. Brain Sciences 2023 Dec, 14(1):18

- Tan XW, …, Tor PC. Personalised transcranial magnetic stimulation for treatment-resistant depression, depression with comorbid anxiety and negative symptoms of schizophrenia: a narrative review. Singapore Med J. 2024 Oct 1;65(10):544-551.

- Ye SJ, …, Tan XW, Tor PC. Repetitive transcranial magnetic stimulation for major depression and obsessive-compulsive disorders in Singapore. Ann Acad Med Singap. 2024 Aug 29;53(8):471-480.

- Tan XW, … Tor PC. Effectiveness of an accelerated transcranial magnetic stimulation treatment protocol for patients with treatment-resistant depression and the impact of changing TMS frequency and target location on treatment response. Transcranial Magnetic Stimulation. 2023 Dec 23;14(1):18.

- Tan XW, Abdin E, Tor PC. Accelerated transcranial magnetic stimulation (aTMS) to treat depression with treatment switching: study protocol of a pilot, randomized, delayed-start trial. Pilot Feasibility Study. 2021;7(1):104. (IF: 3.2)

- Kong R, …Tan XW, … Yeo Thomas TT. Network-based Near-Scalp Personalized Brain Stimulation Targets. Imaging Neuroscience, *2025 Jun 5:2025.05.15.654391.*

- Chen B, Tan XW, Tor PC. Effects of dose on early treatment response to bifrontal electroconvulsive therapy in Schizophrenia: A retrospective study. Psychiatry Res. 2025 May 18;350:116554 (IF:4.2)

- Aoki N, …, Tan XW, …Takekita Y. Relapse Following Electroconvulsive Therapy for Schizophrenia: A Systematic Review and Meta-analysis. Schizophr Bull. 2024 Oct 4:sbae169.

Notable Research/Innovation Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
NMRC CS-IRG July 2023: An open label, single arm study of the efficacy of accelerated intermittent theta burst stimulation in schizophrenia patients with persistent negative symptoms	2023
NMRC Clinical Trial Grant - Investigator-Initiated Trials (CTG-IIT) July 2023: CTGIIT23jan-0001 A novel individualized connectome-guided approach for precision intermittent theta burst stimulation for depression: a double blind, randomized controlled trial	2023
Temasek Funding-Public Health Innovation Feb 2023: TF2223-IMH-01 Personalised Transcranial Magnetic Stimulation Treatment For Depression	2023
MOH Traditional Chinese Medicine Research Grant (TCMRG) 5th Grant Call TCMRG-5-IMH-01	2021

Translating Research/Innovation Into Healthcare

My main research interests include novel neurostimulation medical technologies, translational and clinical research in mental health/neurological diseases. I have been actively involved in the setting-up and development of non-invasive TMS-EEG and TMS-neuronavigational research platform in IMH to improve the treatment efficacy of patients with psychiatric/neurological illness.