

**Proposal Abstract:**

The majority of binary millisecond pulsars (MSPs) have white dwarf (WD) companions. Here we focus on two interesting but rare populations: MSPs orbiting around a He WD with an orbital period of 2-9 hr or a CO/ONeMg WD with an orbital period of  $< \sim 1$  day. Due to two least-well-understood processes, the magnetic braking and common envelope evolution, the detail of formation scenario for these systems remain puzzling. Moreover, the most massive, precisely measured NS was found in He WD-NS binary systems, with a short orbital period, these systems are therefore a perfect laboratory for testing gravitational theories and the equation of state (EOS) models of neutron stars. In the FAST GPPS survey, 3 He WD-NS systems with an orbital period of 2-9 hr and 6 CO/ONeMg WD-NS systems with an orbital period of  $< \sim 1$  day have been discovered. We propose to follow up these binary MSPs, the extensive FAST observations can provide valuable insights into the evolution of binary systems and the formation of MSPs. And in the long-term, possibly they can be used to test gravitational theories and constrain the EOS of the neutron star.