Contribution ID: **74** Type: **Oral presentaion**

# Initiation of a partially pinned scroll wave in excitable chemical media

*Thursday, June 9, 2016 2:15 PM (15 minutes)*

Scroll waves are three-dimensional excitation waves, generally observed in many excitable media. The occurrence of electrical scroll waves in hearts causes some cardiac arrhythmia. Freely rotating scroll waves often drift and annihilate when they hit the boundary. In contrast, scroll waves pinned to unexcitable obstacles (e.g., blood vessel or scars) are discovered to appear last longer. The situations may be more complicated when the scroll waves are partially pinned with an obstacle. We present a successful method for initiating a partially pinned scroll wave in the excitable chemical media-the Belousov-Zhabotinsky reaction. The scroll wave gradually develops a cone-shaped structure because its pinned and freely moving parts have different dynamics.

**Primary author:** Mr PORJAI, Porramain (Faculty of Science and Technology, Valaya Alongkorn Rajabhat University under the Royal Patronage, 1 Moo 20 Phaholyothin Road, Khlong Nuang, Klong Luang, Phathum Thani 13180, Thailand)

**Co-authors:** Ms KEAWNUCH, Benjamas (Faculty of Science and Technology, Valaya Alongkorn Rajabhat University under the Royal Patronage, 1 Moo 20 Phaholyothin Road, Khlong Nuang, Klong Luang, Phathum Thani 13180, Thailand); Dr LUENGVIRIYA, Chaiya (Department of Physics, Kasetsart University, 50 Phaholyothin Road, Jatujak, Bangkok 10900, Thailand); Dr WONGSAWANG, Chalo (Faculty of Science and Technology, Valaya Alongkorn Rajabhat University under the Royal Patronage, 1 Moo 20 Phaholyothin Road, Khlong Nuang, Klong Luang, Phathum Thani 13180, Thailand); Dr KANCHANAWARIN, Jarin (Department of Physics, Kasetsart University, 50 Phaholyothin Road, Jatujak, Bangkok 10900, Thailand); Mrs SUTTHIOPAD, Malee (Department of Physics, Kasetsart University, 50 Phaholyothin Road, Jatujak, Bangkok 10900, Thailand)

**Presenter:** Mr PORJAI, Porramain (Faculty of Science and Technology, Valaya Alongkorn Rajabhat University under the Royal Patronage, 1 Moo 20 Phaholyothin Road, Khlong Nuang, Klong Luang, Phathum Thani 13180, Thailand)

**Session Classification:** Session XXVII

**Track Classification:** Atomic Physics, Quantum Physics, Molecular and Chemical Physics