

DEVELOPMENT OF THE FAR-INFRARED LASER POLARIMETRY FOR CURRENT PROFILE MEASUREMENT ON ITER

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Current stage: Final design activity

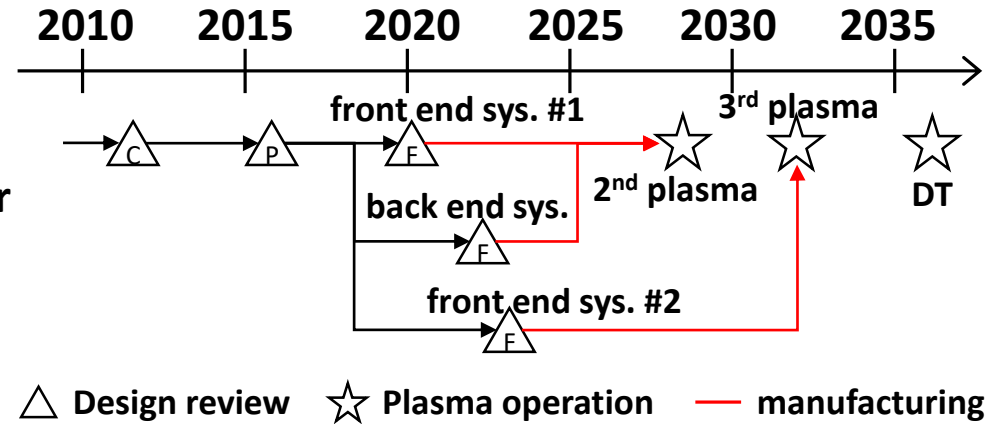
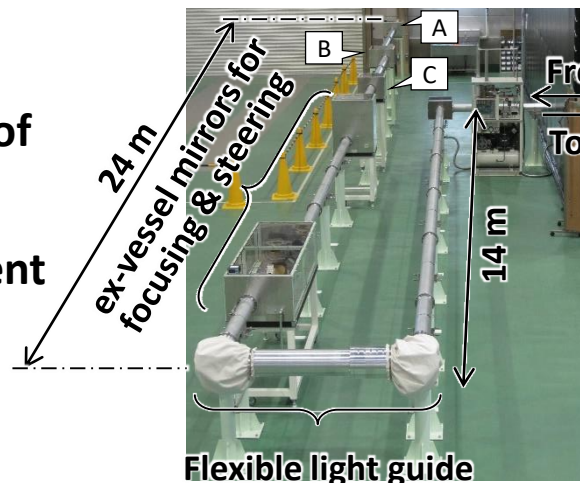
Activity: Design validation using prototype

Major achievements:

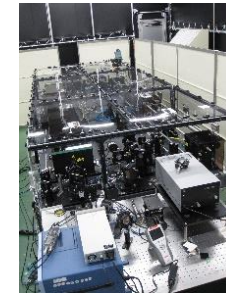
- Manufacturability of single-piece tungsten retro-reflector
- Laser alignment system to transmit FIR laser to both the center of vacuum window and retro-reflector
- Flexible light guide that passively stabilizes laser beam position when two mechanical interfacing points move
- Negligible Faraday rotation in vacuum window

Future works:

- measurement accuracy/stability of entire system
- maintainability in nuclear environment



A: tungsten retro-reflector on first wall



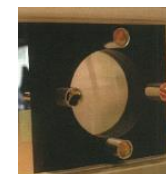
D: FIR laser



E: polarimeter



B: tungsten in-vessel mirror



C: Beam-alignment retro-reflector on vacuum window