

Proposals for Laser Stripping Injection

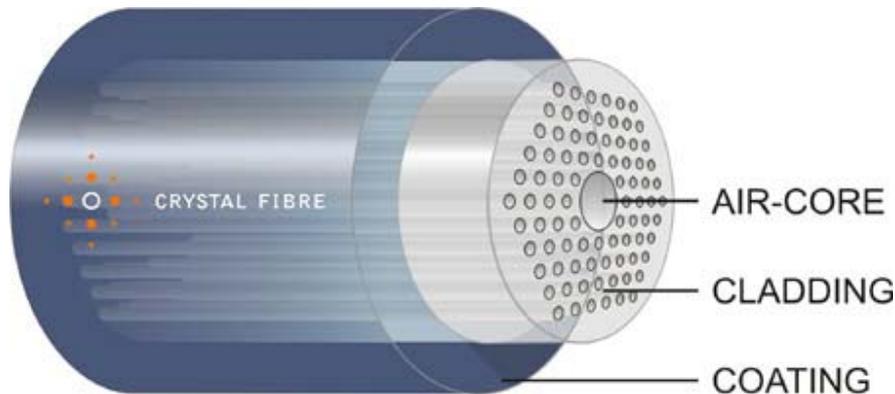
Isao Yamane, KEK

- 1, Laser beam circulator using PBGF (Photonic Band Gap Fiber)**
- 2, Injection system using 3-magnet wiggler (for laser stripping via a broad Stark state)**

Laser beam circulator using PBGF

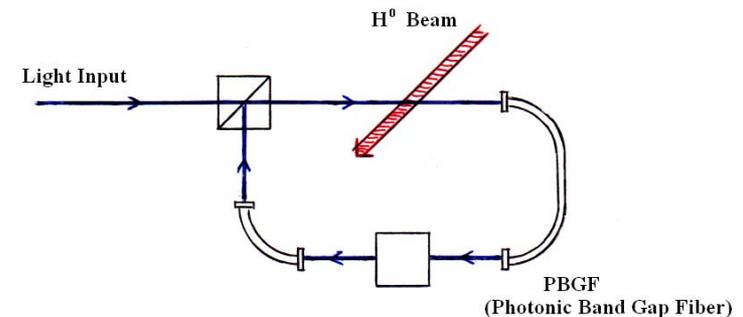
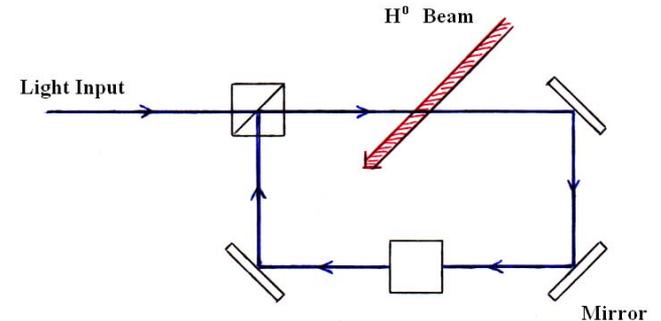
Photonic band gap fiber (PBGF)

For fibers guiding around 1550nm, a typical bandwidth is ~200nm. Outside this region, the fiber core is anti-guiding.



Guiding light in a hollow core holds many promising applications like high power delivery without the risk of fiber damage, gas sensors or **extreme low loss guidance in vacuum**.

Furthermore, this class of fiber has other spectacular properties not found in any other fiber type. They are **almost insensitive to bending (even at very small bending radii)** and extreme dispersion properties, such as anomalous dispersion values in the thousands of ps/nm/km regime is easily obtained. Due to a negligible contribution from the core material (air), the total dispersion of PBG fibers is to a high degree dominated by waveguide dispersion.



Injection system using 3-magnet wiggler (for laser stripping via a broad Stark state)

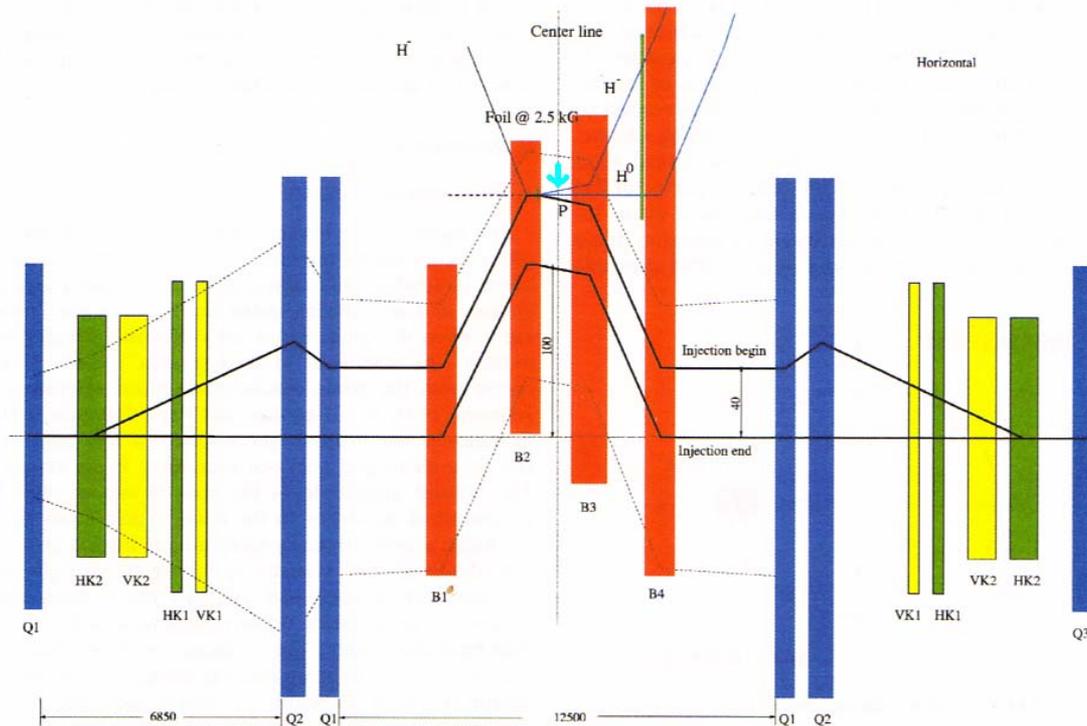


FIG. 25. (Color in online edition) SNS dispersion-free injection. Elements shown are the chicane (B1, B2, B3, and B4), the ring lattice quadrupoles (Q1, Q2, and Q3), and dynamic kickers (horizontal HK1 and HK2, and vertical VK1 and VK2) (Sec. III.C.3).

