

# Fast light in silicon ring resonator with resonance-splitting

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**Abstract:**

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## References and links

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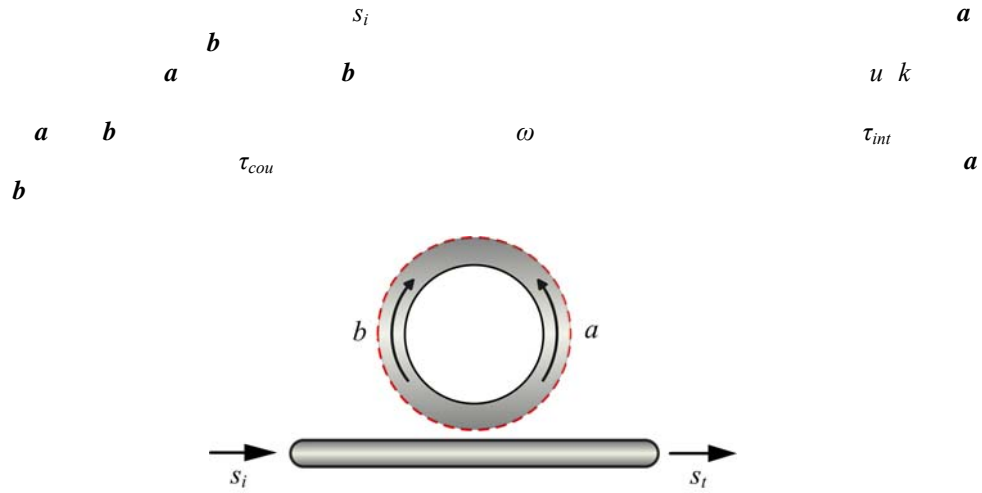
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## 1. Introduction

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## 2. Operational principle



$$\frac{d}{dt}a = \left( j\omega - \frac{\tau_{int}}{\tau_{cou}} \right) a - jks_i - jub$$

$$\frac{d}{dt}b = \left( j\omega - \frac{\tau_{int}}{\tau_{cou}} \right) b - jua$$

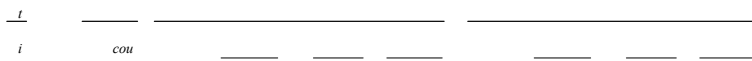
$$Q_{int} \omega \tau_{int} \omega \alpha v \omega k^2$$

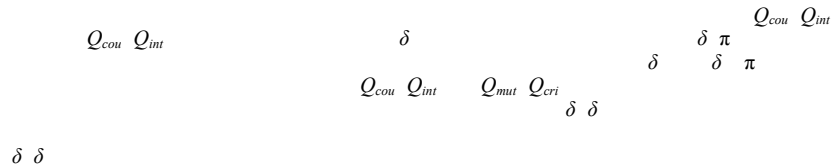
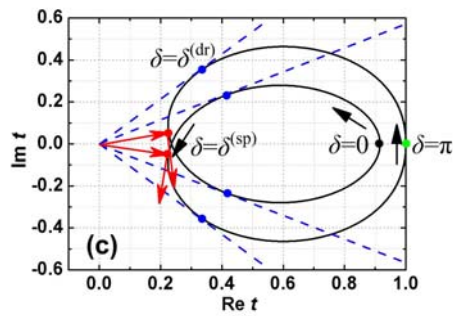
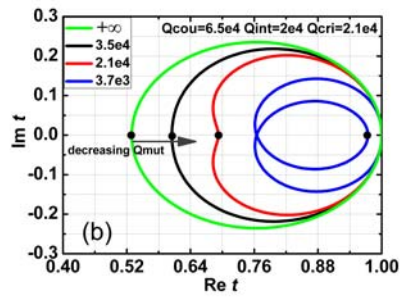
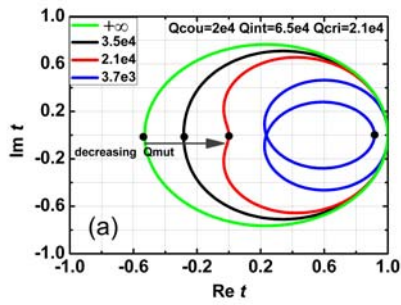
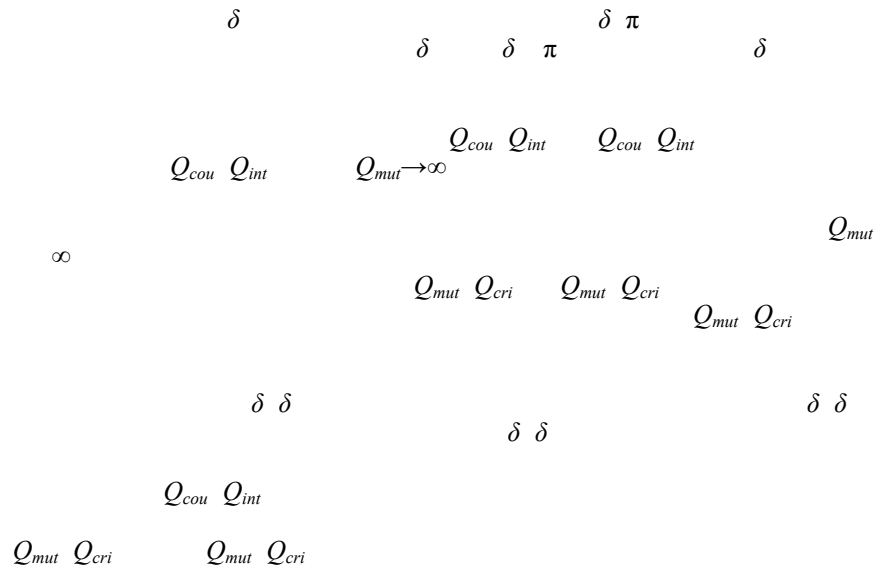
$$Q_{cou} \omega \tau_{cou} \omega k^2$$

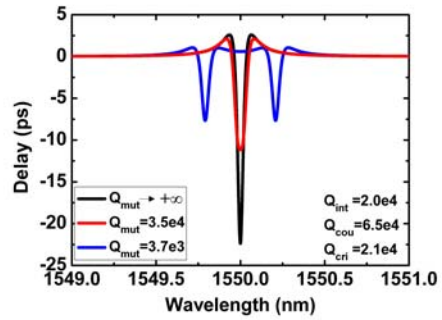
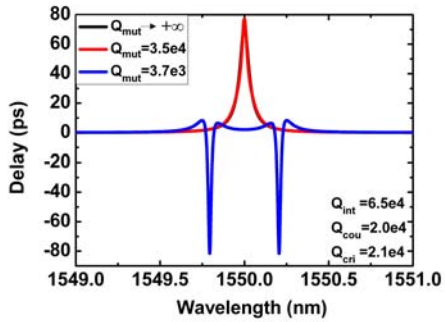
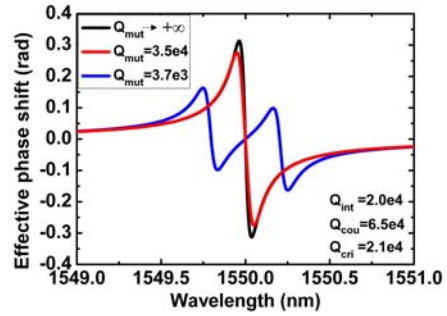
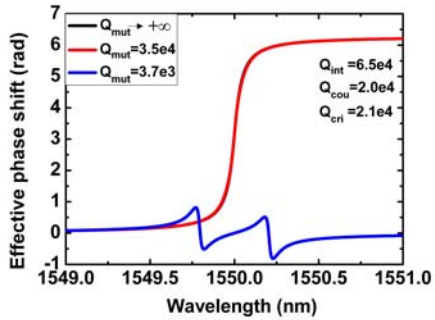
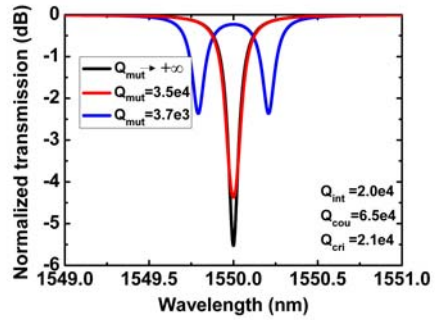
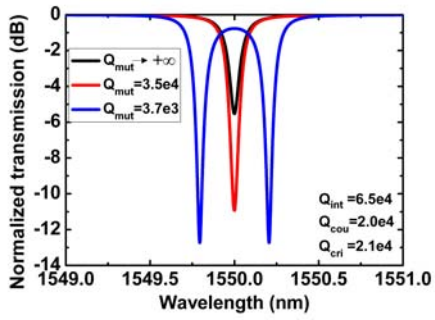
$$v$$

$$s_i \quad Q_{mut} \omega \quad u$$

$$s_t \quad s_t = s_i \quad jka$$







$Q_{cou} \quad Q_{int}$

$Q_{cou} \quad Q_{int}$

$Q_{cou} \quad Q_{int}$	$Q_{mut} \quad Q_{cri}$		
	$Q_{mut} \quad Q_{cri}$		
$Q_{cou} \quad Q_{int}$	$Q_{mut} \quad Q_{cri}$		
	$Q_{mut} \quad Q_{cri}$		

$Q_{mut} = Q_{cri}$

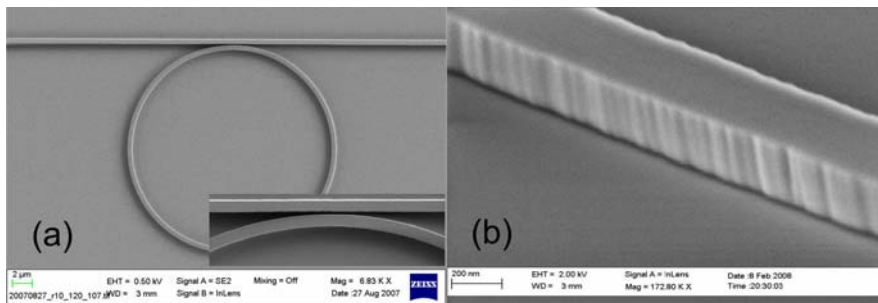
### 3. Device characterization

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$Q_{mut}$



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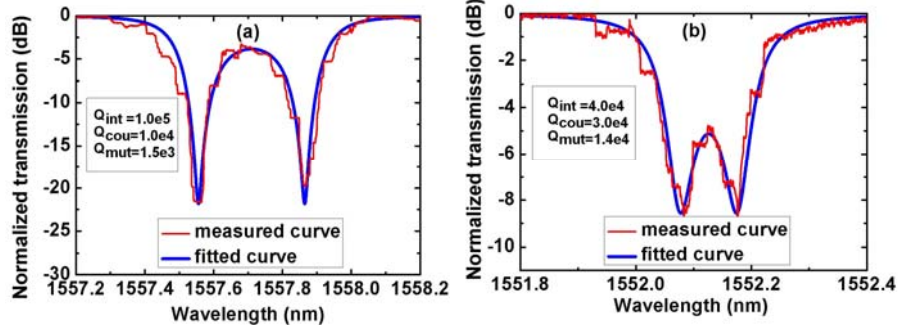
$Q_{mut}$

$\mu$

$Q_{cou}$

$Q_{int}$   
 $\mu$

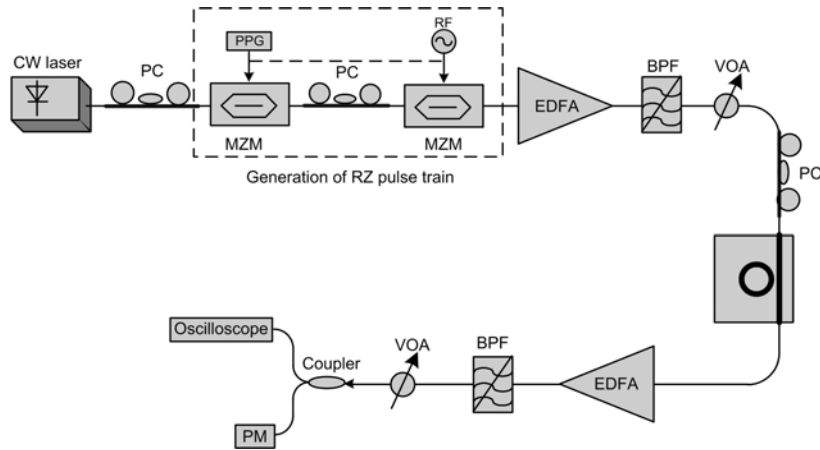
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#### 4. Experiments and results

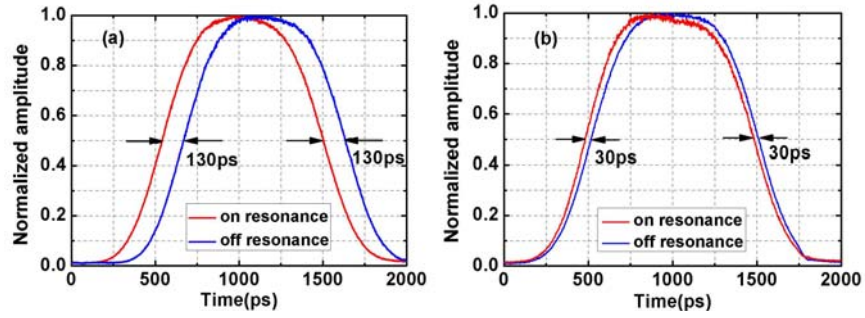


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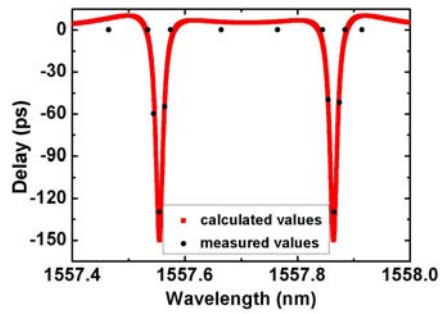
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## 5. Conclusions

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 $Q_{cou}$   $Q_{int}$

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## Acknowledgments