

# Two-Qubit Dynamics with Josephson Qubits

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# History

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Topic of this slide

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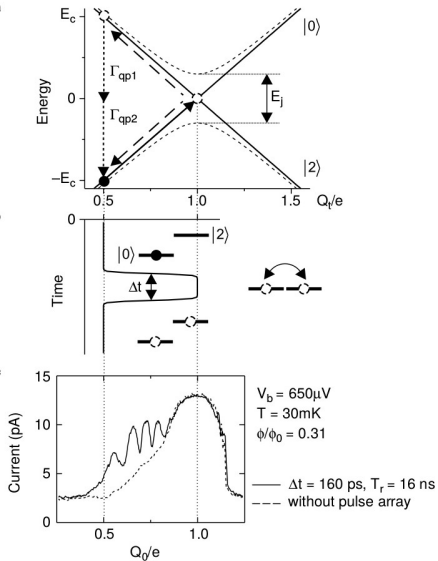
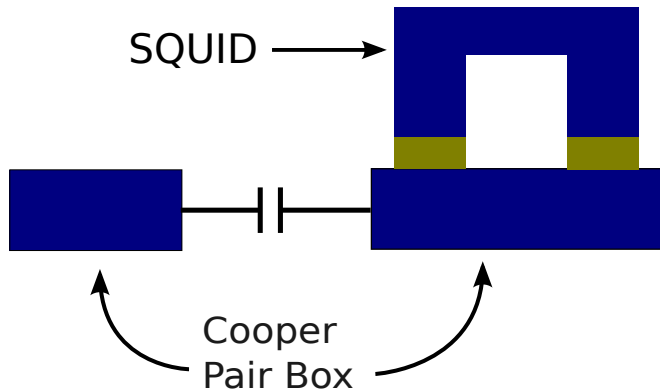


Figure : A simple caption

# Coupling of Two Qubits

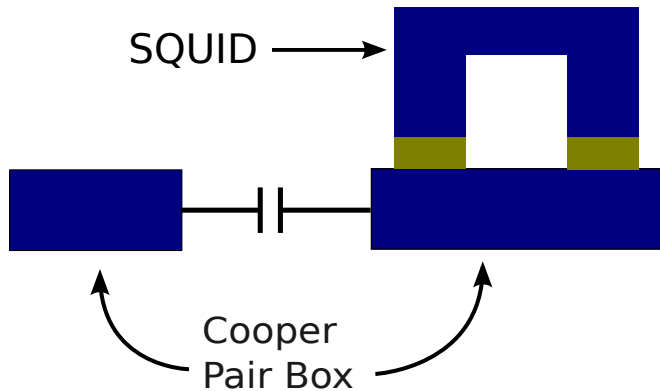
# Coupling of Two Qubits

## Review



# Coupling of Two Qubits

## Basic Idea





# Coupling of Two Qubits

## Parameter Measurements

# Coupling of Two Qubits

## Charging Diagrams

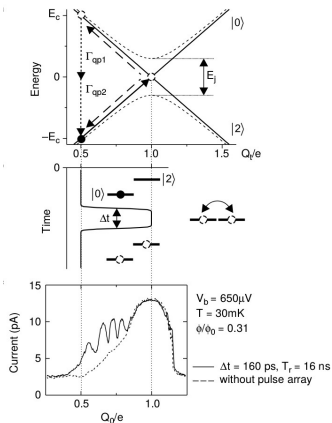


Figure :

<http://www.nature.com/nature/journal/v398/n6730/a3987860a.html>

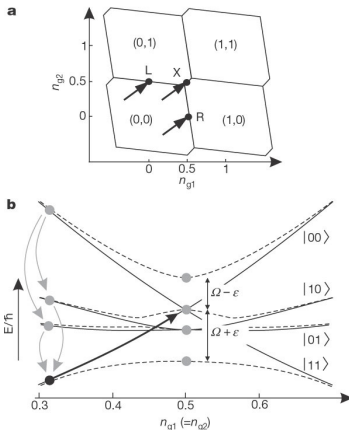
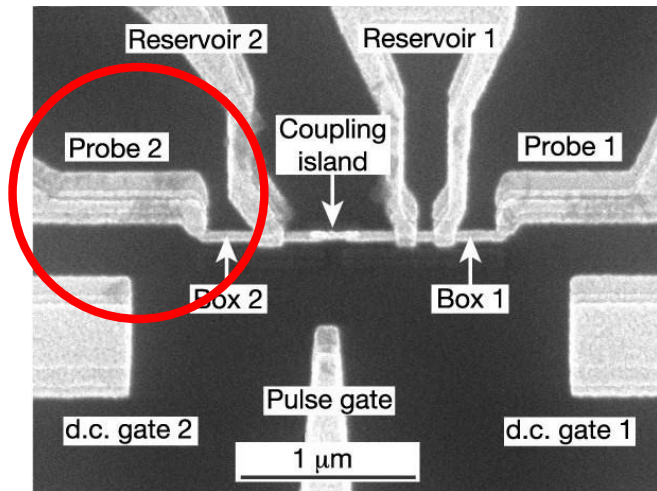


Figure :

<http://www.nature.com/nature/journal/v398/n6730/a3987860a.html>

# Coupling of Two Qubits

## State Readout

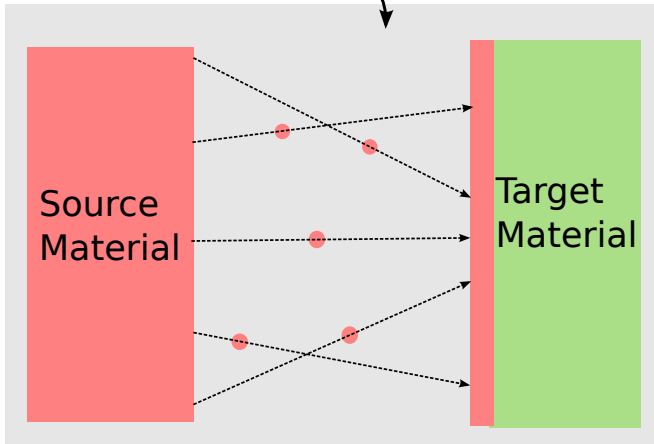


# Fabrication Techniques

# Fabrication Techniques

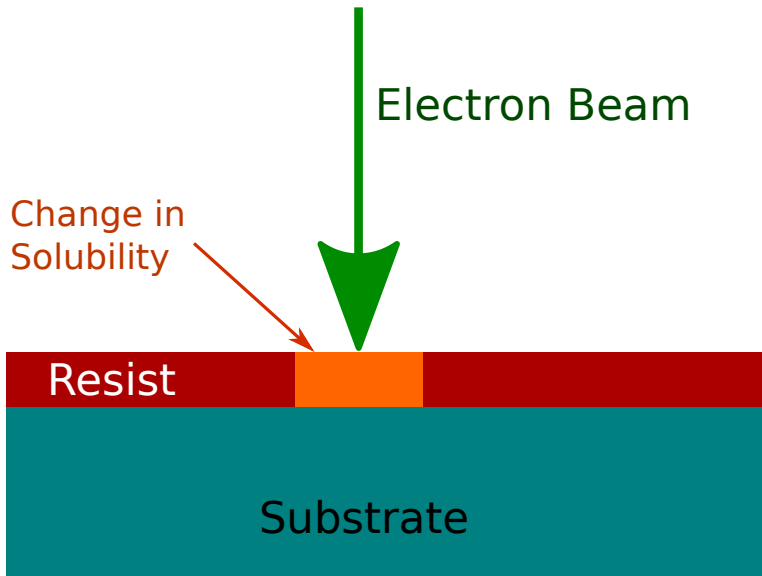
## Evaporation (Deposition)

Vacuum and Heat



# Fabrication Techniques

## Electron Beam Lithography (EBL)



# Fabrication Techniques

## Etching

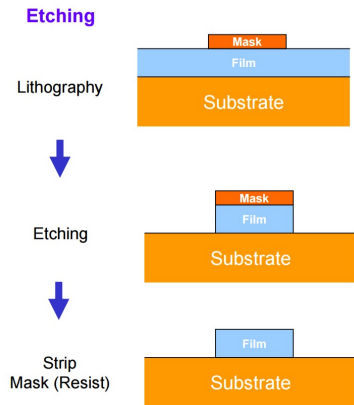


Figure :

<http://www.mrsec.harvard.edu/education/ap298r2004/Erli%20chen%20Fabricat%20Etching.pdf>

# Fabrication Techniques

## Lift-off

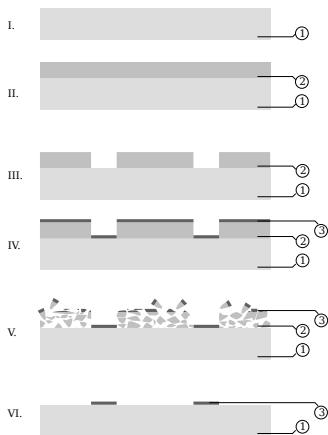


Figure : [http://en.wikipedia.org/wiki/Lift-off\\_%28microtechnology%29](http://en.wikipedia.org/wiki/Lift-off_%28microtechnology%29)



# Fabrication Techniques

SEM image of a SQUID qubit

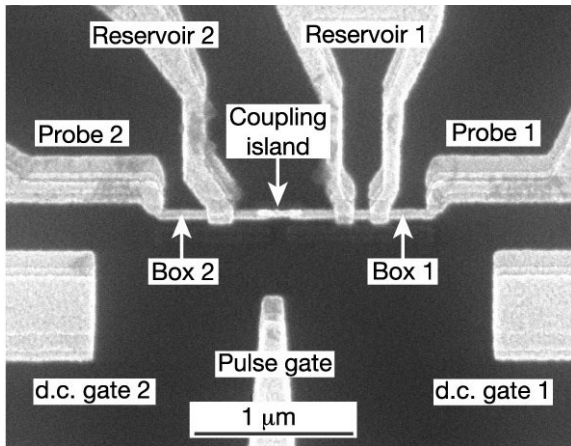


Figure :

<http://www.nature.com/nature/journal/v421/n6925/full/nature01365.html>

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